INTERESTING TRUNK OF A FINE SHAGBARK HICKORY

29th National Shade Tree Conference—Hotel La Salle—Chicago—Aug. 17-21, 1953

Tree Values and Income Tax Reductions — *Orville Spicer*

Chemotherapy of Plants — *Nestor E. Caroselli*

July-August 1953 — *The Journal of American Arboriculture* — Vol. 13 No. 5

POWER The McCulloch 4-30 saw has 4 brake horsepower! (There are many ways to measure or claim horsepower. McCulloch saws are rated exclusively by accurate dynamometer.)

LIGHT WEIGHT Weight is only 30 pounds, complete with 14-inch blade and chain. No other saws of more than 3 hp are this light!

BALANCE Weight is properly balanced on each side of blade for easy use in all positions—bucking, limbing, felling. Balanced for easy carrying, too.

ANGLE CUTTING Swing it upside down, blade up, blade down, any position you want. *IT ALWAYS CUTS FULL POWER WITHOUT ADJUSTMENT.*

SPEED Equipped with exclusive new McCulloch high-speed Sabertooth cutter chain, the 4-30 has sensational speed; it cuts big trees and logs in *seconds!*

New McCULLOCH chain saw

The slick, quick tool for one-man woodcutting

McCulloch Motors presents the powerful, smooth Model 4-30 gasoline-powered chain saw. It is a professional-quality saw of advanced design, built for fast, all-day sawing in timber up to 5 feet in diameter.

MODEL 4-30

LOW PRICE $325, f.o.b. Los Angeles. In many localities, this saw can pay for itself in one week!

some other features:

Automatic clutch... Kick-proof automatic-rewind starter... Chrome-plated cylinder wall... Chrome-plated saber steel blade... Built-in oiler... Positive chain tension control... Grouped engine controls, including starting primer button; no choking required.

Manufactured and guaranteed by the world's largest builders of power chain saws; sold and serviced by factory authorized dealers throughout U.S. and Canada

5-3039

World's Largest Builders of Power Chain Saws

McCULLOCH

McCULLOCH MOTORS CORPORATION • LOS ANGELES 45, CALIFORNIA
Export Dept.: 301 Clay St., San Francisco 11, Calif., U.S.A.
Canada: 220 W. First Ave., Vancouver, B.C.
525 First Ave., Quebec, Quebec
224 N. George Street, Peterboro, Ontario

NATIONWIDE SALES AND SERVICE

TREES Magazine is a bi-monthly Journal published at Olmsted Falls, Ohio, by Edward H. Scanlon, and is devoted to the furtherance of the technical and business administration of Trees (Street and Ornamental); Parks (Municipal and National); and Forests (State, National and Private), in the U. S. Scanlon Publishing Co., 7621 Lewis Rd., Olmsted Falls, Ohio. Subscription by mail $2 per year; outside United States, $2.50. Advertising rates upon inquiry. Closing date for advertising copy—10th of month preceding date of issue. Unsolicited manuscripts must be accompanied by return postage.

ALONG THE WAY With .... EDW. SCANLON

■ If I NEVER SEE the results of ANOTHER TORNADO it will be JUST DANDY WITH ME. One hit CLEVELAND on JUNE 8 — 5000 STREET TREES wrecked on 100 MILES OF STREET extending in a diagonal line HALF-WAY ACROSS the city. THANK HEAVENS for the CHAIN-SAW.

■ **One observation SEEMS PERTINENT—the TREES SEEMED TO ABSORB the FIRST, and worst shock, and houses, where THERE WERE TREES seemed to SUFFER LESS DAMAGE than where there WERE NO TREES. Where there WERE NO TREES the houses WERE COMPLETELY DEMOLISHED or badly wrecked.**

■ An INTENSIVE PROGRAM OF REPLANTING, small TAILORED TREES on the DENUDED STREETS—at the proper, and ADEQUATE, SPACING is scheduled to BEGIN THIS FALL. Flowering crabs, form trees, GOLDENRAIN, Phellodendron, Evodia, ZELKOVA, uprights and globes, and others, will be BLENDED TO FIT THE SPACE AVAILABLE, and REDUCE CONFLICTS with sewers, wires, street lights and sidewalks. About 2500 TREES WILL BE USED.

■ **The WOOSTER, OHIO, SHADE TREE COMMISSION paid us a VISIT LAST MONTH. Headed by PAUL TILFORD, TED MATHIEU and OLLIE DILLER, we had a FINE DAY looking over TREES AND STREET TREE PLANTINGS.**

■ FOUND A BEAUTIFUL specimen of HOP-HORNBEAM on a street here DURING THE TORNADO mess. This is a PERFECT TREE FOR STREETS in my opinion. The HORNBEAM-LIKE foliage is nice, the HOP-LIKE fruit very interesting, the FORM IS EXQUISITE, but the BARK!—SHAGGY AND PEELING in THIN STRIPS like a Shag-bark Hickory give it a CHARACTER THAT IS EXTREMELY PLEASING. I have seen a NUMBER GROWING ON TREE-LAWNS—I think CARL FENNER has one in LANSING and JOE SWEENEY one in TOLEDO — another of the "OVERLOOKED" treasures (OSTRYA VIRGINIANA).

■ **An UNEXPECTED VOICE on the phone the other night TURNED OUT to be RAY HARTMAN AND MAGGIE. HAD a NICE VISIT at the RANCHO, then to the STREET TREE PLANTINGS in Cleveland. Before RETURNING TO SAN JOSE the good HARTMANS will hit the NURSERYMEN'S CONVENTION in New York and the SHADE TREE CONFERENCE in Chi.**

■ WHATA GUY THIS TILFORD is: its GRANDMA and GRANDPA, ESTHER AND PAUL, again as DAUGHTER JANE presented LITTLE DAVID to the world on JULY 4th.

■ **DOESN'T ANYONE know WHERE I CAN GET about five pounds of PRUNUS SERRULA SEED (REDBARK CHERRY). This tree IS BEAUTIFUL but seed SEEMS to be a NONEXISTENT COMMODITY? Why hasn't it BEEN ON THE MARKET?—anyone know? — a nurseryman THAT COULDN'T sell this OUGHT TO GO to DIGGING DITCHES.**

■ I understand BILL RUTH, City Forester of FLINT, MICH., has a TORNADO MESS on his hands. How ABOUT A LITTLE dope on IT BILL. Did it hit the "OGDEN" MAPLE?

■ **In the CLEVELAND TORNADO both the "CHARLES IRISH" and "ALMIRA" NORWAY SELECTIONS were badly damaged. The "ALMIRA" was COMPLETELY DEHORNED but is beginning to SUCKER OUT—I'M HOPING.**

■ If YOU HAVEN'T made YOUR RESERVATIONS for the NATIONAL SHADE TREE CONFERENCE you'd BETTER DO IT—Aug. 17-21, HOTEL LA SALLE, Chicago. This OUGHT TO be a hummer—hope THE WEATHER ISN'T.

■ **TRAFFIC AT THE RANCHO is heavy—SAM RICH, HILLSBORO, ORE. stopped OVER NITE BETWEEN planes TO NEW YORK.**

■ **DO ANY of you TEXAS SHORTHORNS know the LOCATION OF, or EXISTENCE OF a good specimen of SOPHORA SECUNDIFLORA. This is a BEAUTIFUL SMALL TREE to 25' that bears FRAGRANT BLUE FLOWERS and strangely enough IT GROWS IN TEXAS. The only one I EVER SAW was in SANTA BARBARA and it was lovely. I'd like TO LOCATE a good specimen and ARRANGE TO GET some KODACHROME SHOTS of FLOWER CLOSE-UPS, FOLIAGE AND FULL TREE for my collections. I hope YOU SHORTHORNS can HELP. It's COMMON NAME is CORAL BEAN.**

■ A SPLENDID WRITE-UP on "TREE REPLACEMENTS" appeared in the TOLEDO (OHIO) BLADE PICTORIAL section for July 19. JOE SWEENEY, CITY FORESTER, was the instigator—VERY GOOD INSTIGATING, JOE. Three pages of pix showing the FUNCTIONAL SMALL TREES like OSTRYA, PHELLODENDRON, DOGWOOD, RED HORSECHESTNUT—and pix of OLD OUTMODED FOREST GIANTS — we NEED MORE OF THIS, every CITY FORESTER should do it—SEND OUT a couple HUNDRED JOE.

■ **On pages 12 and 13 you will see a NUMBER OF PICTURES showing the RAVAGES OF THE TORNADO that hit Cleveland June 8. THE TREES DEFINITELY SAVED PLENTY OF PROPERTY DAMAGE—THEY ABSORBED THE FIRST SHOCK.**

■ LOIS and CHARLEY IRISH received VERY BAD NEWS on ARMISTICE DAY. BUD (CHARLEY JR.) was SERIOUSLY WOUNDED by MORTAR FIRE in KOREA ON JULY 16. He lost his right eye. NO FURTHER INFORMATION has been obtained. We're PRAYING FOR THE BEST.

CONTENTS

Vol. 13 Bi-Monthly No. 5

Subscription Price $2.00 Per Year
(Foreign $2.50) 35 Cents Per Copy
TREES MAGAZINE
7621 Lewis Rd., Olmsted Falls, Ohio

The Editors of TREES invite discussions, comments and all types of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.

CONTENTS

Editorial 4
Still Messing Around
Tree Values And Income Tax Reductions 8
by Orville Spicer
Some Aspects of Contemporary Street Tree Management . . . 10
by Edward H. Scanlon
Cleveland's June 8 Tornado (pictures) 12-13
N. A. A. News 14
by Paul E. Tilford
Chemotherapy of Plants 15
by Nestor E. Caroselli
An Innovation in Spray Applicators 18
Perpetuation of Forest Resources In The Western Pine Region . 20
by Earnest L. Kolbe
Interesting Trees At Alhambra Civic Center 26
by Woodbridge Metcalf
Authors and Books 34

■ **HARRY BANKER had to PASS US UP on a VACATION TRIP with HIS FAMILY. He WAS OUTVOTED—probably his family HEARS ENOUGH ABOUT TREES FOR 50 WEEKS OF the year, and REALLY WANTED A VACATION. Better LUCK NEXT TRIP, HARRY.**

■ Spent a PLEASANT DAY with JUDD FISH in WORCESTER, MASS., looking over some LITTLELEAF LINDENS—which we HOPE TO PLANT ON DOWNTOWN STREETS this fall—6-INCH CALIPER STUFF. Their TORNADO DAMAGE was QUITE GHASTLY also.

■ Well DON'T FORGET to be ON HAND for the 29th NATIONAL SHADE TREE CONFERENCE IN CHICAGO—Hotel LaSalle, Aug. 17-21—GONNA BE A GOOD MEETING.

■ **TWO EXCELLENT Norway maples in the "TAILORED TREE" class that will SOON BE AVAILABLE for STREET AND HOME use are the "CHARLES F. IRISH"—a fine, ROUND-HEADED TREE with UPSWEEPING BRANCHES—and the "CLEVELAND," a BEAUTIFUL OVAL UPRIGHT FORM with STRONG BRANCHING habit and NICE DARK, LARGE FOLIAGE. You have SEEN PIX of both in PAST ISSUES. We'll RUN THEM in the NEXT NUMBER.**

What—Where—When

National Shade Tree Conference, LaSalle Hotel, Chicago, Ill. August 17-21.

American Institute of Park Executives, Denver, Colo. September 13-17.

Observe NATIONAL ARBOR DAY Last Friday in April

July-August, 1953 **Journal of the National Arborist Association** Vol. 13—No. 5

EDWARD H. SCANLON, Editor
7621 Lewis Rd., Olmsted Falls, Ohio
ADams 5-2357

"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; A COUNTRY WITHOUT TREES IS HOPELESS."

ADVISORY COUNCIL

L. C. CHADWICK
Professor of Horticulture
Ohio State University, Columbus, O.
RALPH D. CORNELL
Landscape Architect, Los Angeles, Calif.
H. DANA BOWERS
State Landscape Engineer
Division of Highways
Sacramento, Calif.
MAUNSELL VAN RENSSELAER
Director, Saratoga Horticultural Foundation
Saratoga, Calif.
NOEL B. WYSONG
Forester, Cook County Forest Preserve, River Forest, Ill.
PAUL E. TILFORD
National Arborist Association
Wooster, Ohio
FORREST C. STRONG
Assistant Professor of Botany
Michigan State College
East Lansing, Mich.
CHARLES F. IRISH
Arborist, Cleveland, Ohio
P. P. PIRONE
New York Botanical Garden
New York, N. Y.
DONALD WYMAN
Horticulturist, Arnold Arboretum
Jamaica Plain, Mass.
CURTIS MAY
Principal Pathologist, Bureau of Plant Industry Station, United States Department of Agriculture, Beltsville, Maryland.
KARL DRESSEL
Assoc. Prof. Forestry, Michigan State College
East Lansing, Mich.
MALCOLM A. MCKENZIE
Director, Shade Tree Laboratories
University of Massachusetts
Amherst, Mass.
EMANUEL FRITZ
Associate Professor of Forestry
University of California, Berkeley, Calif.

Still Messing Around

It is appalling and embarrassing, not to mention the unimportant point, that it is also very poor business, for the general field of Horticulture to so brutally overlook the all-important function of public relations. This has always been a dull spot in the field, although several notable departures from the norm have left indelible impressions in the minds of the amateur gardener.

One of the drawbacks to a uniform dissemination of horticultural information is, and probably always will be, the difference of opinion that prevails regarding the best or proper way to do this or that. Also there is the climatic differential that causes confusion, especially so in the consideration of hardiness. Many other factors make the presentation of any single method of procedure rather difficult to propound. But in spite of these obstacles it would seem that some good general program of horticultural education could be compounded.

We have on a number of occasions advocated that the National Shade Tree Conference set up a public relations committee to compose publicity releases that could be distributed to the 100 or more City "Foresters" in its membership. Here is the surest means of placing material in the public press. Newspapers will give public officials every consideration—they know that trees, on the streets, in the parks and on home grounds are an integral part of city planning and of the cultural life of every community. Under such a circumstance why not avail ourselves of this opportunity. Not every City Arborist or shade tree official is publicity minded, nor is he capable of writing up some of the things he is able to do and knows very well, but if a regular news story were sent to him, weekly or monthly, he could pass it on to his local paper and few would be dumped in the waste basket.

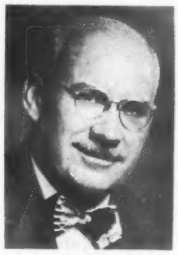
This same procedure could be employed by other branches of horticulture. Park organizations could release through park superintendents—the Nursery Association could do the same through either the park men or City Arborists. At least it would be a start and seemingly, well worth the effort.

Maybe a general publicity program could be engineered through the American Horticultural Council which now has an imposing membership roster of single plant societies and trade organizations. It shouldn't be too difficult to sell these members on the idea of contributing a certain sum each year, pro-rated on the basis of the business volume of the organization, with which to do some sort of a public relations job. The A.H.C. seems like the logical clearing house if they can only untrack themselves and begin to do the job of which they are capable. Such an undertaking is certainly a logical undertaking for such a composite organization and should be high on their agenda of objectives. But they will have to stop wasting time on relatively unimportant things and reach for a broader horizon.

Anyway we feel that at present, compared to the way horticultural things are done in England, and other places, we are still running around in circles and messing around generally so far as selling the public on the values and benefits and intricacies of horticulture.

New President of A. A. N.

At the recent convention of the American Association of Nurserymen held in New York, July 18-24, the honor of President of the organization was conferred on John D. Siebenthaler. Mr. Siebenthaler, head of the Siebenthaler Co. of Dayton, one of the country's finest nurseries, has held many posts of honor in his profession and has recently played an important part in the formation of the Plant Propagators Society. One of the notable contributions to horticulture of his firm is the new patented "Moraine" (honey) Locust.



J. D. Siebenthaler

Forest Tree Improvement Conference

The Northeastern Forest Research Advisory Council, at its 1953 annual meeting on June 26, considered the advisability of a regional conference on forest tree improvement. In view of the interest, and particularly of the active research in this field, the Council voted to sponsor a Northeastern Forest Tree Improvement Conference at Williamstown, Massachusetts, on August 25 and 26, 1953.

The primary purpose of this conference is to bring together research workers, practicing foresters, forest owners and representatives of wood-using industries who are interested in better trees for our future forests, whether *naturally regenerated or planted*. It is the opinion of the Council that such a conference can provide the basis for more rapid progress through closer coordination and cooperation, and more effective exchange of ideas and research results.

The conference will be held at Williams College, Williamstown, Massachusetts. Dormitory accommodations will be available. There are accommodations for 20 married couples and 60 single men, at $2.00 per person per night. Hotel and motel accommodations for families are available in the vicinity. A list of these will be sent to those requesting such information. Meals cannot be provided by the College but there are good restaurants in the town and vicinity.

Tamarack Bogs

Approximately 50,000 years ago the earth's climate became warmer and the last great ice sheet—called the Wisconsin Glacier—one lobe of which had crept southward to cover where Chicago now stands, began to retreat. Here and there as it melted back, huge blocks of ice were left behind—landlocked icebergs surrounded by moraines of gravel, boulders, and clay or ground-up rock. When these blocks melted they left depressions which became lakes or, in many cases, bogs. These bogs eventually were filled with decayed and partly decayed vegetation, or peat, and became covered with a floating mat of sphagnum, or peat moss, which supported a growth of plants now rare here—plants typical of the far north—including tamarack trees.

South of the glacier there was probably a wide belt of tundra like that near the Arctic Circle today. Beyond that, much of central and northern Illinois was covered with a coniferous forest similar to that now found north of Lake Superior. From the kinds of pollen grains found preserved in peat bogs we know that, as the glacier retreated, the tundra was invaded by advancing forests of balsam fir, then spruce, pine, birch and maples, in that order. In the swampy areas there were tamarack, ash, alders and willows. Finally, deciduous trees replaced the conifers on the higher ground and for perhaps 15,000 years our typical oak-hickory forest, mixed with elm, ash, basswood, maples and other hardwoods, has predominated. A few remnants of the pine stands have persisted on poor sandy soils, and a few tamarack bogs in northern Indiana—notably at the south edge of the great sand dunes—and in Lake and McHenry counties of Illinois.

Civilization has been unkind to the tamarack bogs. Many were drained. Others have been destroyed by fires which killed the tamaracks and the sphagnum moss. Others are gradually disappearing because of an influx of warm alkaline water from the surrounding slopes when cleared of timber and placed under cultivation. Bog water is cold and acid.

Walking on such a bog is difficult and even dangerous—something like attempting to cross a pond covered with floating cakes of ice—but there one finds rare acid-loving plants such as ferns, orchids such as the moccasin flower or lady's slipper, the pitcher plant which traps and consumes insects, wintergreen, cranberries, blue berries, bog rosemary, leatherleaf, Labrador tea and many others. Among the shrubs we find dwarf birch, winterberry, and the poison sumac which is more dreaded than poison ivy. Perched on the spongy quaking surface mat we find tamaracks in all stages of growth from tiny seedlings to old trees 12 or more inches in diameter and 40 feet high. Because their network of roots is very flat and shallow, many are blown over and lie, slowly decaying, in a tangle upon the surface.

The Tamarack, or American Larch, also called Hackmatack, occurs to the northern limit of tree growth in Canada, and in dwarf forms to the Arctic Ocean. Sometimes its straight slightly-tapering trunk may reach 50 or even 80 feet in height and 18 inches diameter. The tree has a slender spire-like shape and its stiff light-green needles, about one inch long, are borne in compact tufts of 30 to 50 along the twigs, giving it a distinctive feathery appearance. Unlike most cone-bearing trees, in autumn its leaves turn lemon yellow and drop off.

Its bark contains tannin and was valued by the Indians for its medicinal properties. The strong fibrous roots were used by them to weave into bags, and as sewing material to make canoes. Its seeds are eaten by many birds.

In Illinois, tamaracks are relics of the Ice Age.

Roberts Mann.

New USDA Yearbook Features Insects

Publication of the 1952 Yearbook of Agriculture, a 952-page volume entitled "Insects," was announced this week by the U. S. Department of Agriculture.

The new yearbook is designed to be a practical aid to farmers and city people in identifying insects, making better use of the helpful ones, and controlling the pests that cause an estimated four billion dollars of damage each year.

An outstanding feature of the new yearbook is a section of 72 color plates of the important insects of the United States. The drawings depict the life stages of the insects and the damage they do. Opposite the drawings are descriptions and control recommendations. In addition, 8 black-and-white photographs and more than 200 line drawings will help readers identify insects.

The yearbook begins with general discussion about the number of insects, their history, how they live, what they eat. A key to insect identification and information about making collections follows. A chapter "Insects as Helpers" includes articles on pollination by honey bees and other insects, bee breeding, the effect of insecticides on bees, and weed control by insects. The destructive species are discussed in the next chapter—those that transmit diseases of plants, animals, and humans, as well as those that destroy crops and livestock by direct feeding.

The Yearbook is produced in the Department of Agriculture as a congressional document. Its main distribution is by members of the Senate and House of Representatives. Copies are also for sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Program—29th National Shade T

The time is rapidly approaching for the opening of the 29th National Shade Tree Conference in Chicago August 17th. All of the sessions will be held in the Hotel LaSalle and will run thru August 21st.

President George S. Langford will formally open the Conference on Tuesday August 18th at 10:00 A. M. with the invocation by Dr. T. Otto Nall of Chicago. The Address of Welcome will be given by Mr. Charles G. Sauers, General Superintendent of the Forest Preserve District of Cook County.

The first paper will start at 11:00 A. M. and is titled "Practical Blossom Control for the Arborist." From there on the normal pattern will obtain.

Several innovations are noted in this years agenda. On Monday, the official opening day, the whole afternoon will bet set aside for visits to the booths of the commercial exhibitors. This is a good thought and should give both delegates and exhibitors a fine opportunity to get acquainted. Another new wrinkle, in the interest of getting away from the "dangerous" Tree Climbing Contest, are several contests, such as Rope Throwing, One Man Cross-Cut Log Sawing—Two Man Log Sawing and Lag Hook Installation and Thimble Wrapping. Further details for entry can be noted in the program that follows.

Noel Wysong, General Chairman and his capable committee heads have been hitting the ball hard for months on this program and they assure you fine entertainment as well as a fine educational meeting if you take the time to attend this always worthwhile conference.

TWENTY-NINTH NATIONAL SHADE TREE CONFERENCE CONVENTION

PROGRAM

LaSalle Hotel, Chicago, Illinois
August 17-21, 1953

All sessions held in the Illinois Room, Mezzanine Floor, unless otherwise stated.

Central Daylight Saving Time

Sunday, August 16

P. M.

2:00—*Executive Committee Meeting*—Press Gallery

Monday, August 17

A. M.

9:00—*Registration* — Mezzanine Floor

—Visit the Commercial Exhibits

10:00—*Meeting of National Arborists Association* — Illinois Room

P. M.

1:30—*Registration* — Mezzanine Floor

—Visit the Commercial Exhibits

—*Meeting of National Arborists Association* — Illinois Room

Evening

8:00—*Informal Party and Barn Dance* — Century Room, LaSalle Hotel

Tuesday, August 18

A. M.

8:00—Registration — Mezzanine Floor

10:00—Official Opening of the 29th Convention — Pres. George S. Langford

Invocation—Dr. T. Otto Nall, Rock River Conference, Methodist Church, Chicago, Illinois

Address of Welcome — Charles G. Sauers, Gen. Supt., Forest Preserve District of Cook County, River Forest, Illinois

Appointment of Convention Committees

11:00—*Practical Blossom Control for the Arborist* — Theodore Haskell, Forestry Dept., Lansing, Michigan; Harry Turner, Secretary, Shade Tree Commission, East Orange, New Jersey

P. M.

1:30—*Business Session.* Open to all members.

Pres. Langford, Presiding

—Roll call of members of Board of Governors

—Nomination and election of Executive Committee members from Regions 1, 3, 5 and 7

—Nomination and election of Membership Committee from Regions 3 and 6

—Report of the Executive Committee—L. C. Chadwick, Sec.

—Report of the Budget Commitee—Paul E. Tilford, Chairman

—Report of the Secretary—L. C. Chadwick, Dept. Hort., Ohio State University, Columbus, Ohio

—Report of the Treasurer—L. C. Chadwick, Treasurer

—Report of the Editor—Paul E. Tilford, Executive Secretary, National Arborists Association, Wooster, Ohio

—Old Business

—New Business

2:30—*Business Trends and Economic Outlook for 1953-54*—Guy Reed, Executive Vice-President, Harris Trust and Savings Bank, Chicago, Illinois

3:30—*Spruce Branch Canker* — Forrest Strong, Dept. Botany, Michigan State College, East Lansing, Michigan

29th ANNUAL CONVENTION
LaSALLE HOTEL—CHICAGO, ILLINOIS—AUGUST 17-21, 1953

GENERAL CHAIRMAN:

Noel B. Wysong, Cook County Forest Preserve District, 536 N. Harlem St. River Forest, Illinois

COMMITTEE CHAIRMEN:

Trade Exhibits—Ivan Smalley, Chicagoland Tree and Landscape Service, Inc., 9816 S. Charles Street, Chicago, Illinois

Publicity—William Rose, Landscape Architect and Engineer, 331 N. Waiola Avenue, La Grange Park, Illinois

Educational Exhibits—J. C. Carter, Illinois Natural History Survey, 337 Natural Resources Bldg., Urbana, Ill.

Field Demonstrations—A. F. Carlstrom, Washington Park Adm. Bldg., 740 E. 56th Place, Chicago 37, Illinois

Contests—C. L. Wachtel, Wachtel Tree Science and Service Co., 612 Maywood Avenue, Wauwatosa 13, Wisconsin

Transportation—Marvin Stevens, 77 Park Drive, Glenview, Illinois

Properties—Joseph Josephson, Tree Surgeon, 12226 Ann Street, Blue Island, Illinois

Entertainment—A. F. Carlstrom, Washington Park Administration Bldg., 740 E. 56th Place, Chicago 37, Illinois

Ladies Program—G. B. Wallace, Supt. Parks Dept., 606 Greenleaf Avenue, Wilmette, Illinois and Zelpha Helms, 712 Ash Street, Winnetka, Illinois

PLANT AMERICA

Tree Conference—Chicago

CONTESTS
NATIONAL SHADE TREE CONFERENCE CONVENTION
Chicago, Illinois, August 17-21, 1953

The following contests which will be held on Wednesday, August 19th in conjunction with the Commercial Demonstrations at Jackson Park.

Anyone registering for the National Shade Tree Conference is eligible to participate. Prizes will be awarded winners.

Contests

1. Rope Throwing
2. One-Man Cross Cut Saw Log Sawing
3. Two-Man Cross Cut Saw Log Sawing
4. Lag Hook Installation and Thimble Wrapping. Will be done on ground, one person per entry
5. Two Ladies Cross Cut Saw Log Sawing

Specifications:

One-half inch ropes, two-man and one-man cross-cut saws will be available. Contestants may bring their own if they wish. No special type or length of saw is required. Those competing in the Lag Hook Installation and Thimble Wrapping contest may bring their own Bit Braces, wrenches and 4/15, 5/16, and 7/16" Lag Bits for 5/14, 3/8, and 1/2" Lag Hooks. These tools will also be available for use for contestants who do not bring their own. The Lag Hook, Thimbles and Galvanized 7 wire strand will be provided.

Entering

All contestants should signify their intentions by writing to Contest Committee Chairman, Mr. C. L. Wachtel, 611 Maywood Avenue, Wauwatosa 13, Wisconsin. Applications should be made on or before August 16th, 1953.

4:15—*Municipal Forestry Problems* — Griggs Waring, City Forester, Milwaukee, Wisconsin

Evening

7:00—Dinner and Meeting of the National Arborists Association—Century Room

8:00—*Municipal Arboriculture and Forestry* — Meeting of City Foresters, Park Superintendents and others interested in Public Area Tree Management Problems—Illinois Room.

Discussion Leader: Carl Schiff, City Arborist, Brooklyn, New York.

Wednesday, August 19

A. M.

7:30—*Past Presidents Breakfast*—Parlor C.

Educational Session Chairman — A. W. Meserve, Vice President, National Shade Tree Conference.

9:00—*Developments in Oak Wilt Research* — Panel Discussion

Leader—Dr. A. J. Riker, Dept. Plant Pathology, University of Wisconsin, Madison, Wisconsin

Others—Dr. T. W. Bretz, Division Forest Pathology, U.S.D.A., University of Missouri, Columbia, Missouri

Dr. Wendell Bragonier, Dept. of Botany and Plant Pathology, Iowa State College, Ames, Iowa

Dr. Roy D. Shenefelt, Dept. Entomology, University of Wisconsin, Madison, Wisconsin

Dr. R. B. Neiswander, Dept. Entomology, Ohio Agricultural Experiment Station, Wooster, Ohio

10:45—Buses leave for Jackson Park —*Commercial Demonstrations and Contests*

P. M.

12:30—Luncheon

1:30—Commercial Demonstrations and Contests

Evening

8:00—*Meeting of Public Utility Arborists*—Press Gallery

Kenneth Flaig, Ft. Wayne, Indiana, Presiding

Thursday, August 20

A. M.

9:30—*Elm Diseases—Panel Discussion*

Leader — Dr. J. C. Carter, Natural History Survey, Urbana, Illinois

Others—Dr. Curtis May, Division of Forest Pathology, U.S.D.A. Beltsville, Maryland

Dr. Donald L. Schuder, Dept. Entomology, Purdue University, Lafayette, Indiana

W. N. Engledow, Midwestern Tree Experts, Indianapolis, Indiana

11:00—Business Meeting. Open to all members. Pres. George S. Langford, Presiding.

—Roll Call of members of Board of Governors

—Committee Reports:

Memorial Research Fund Committee—Dr. Paul E. Tilford, Executive Secretary, National Shade Tree Conference, Wooster, O.

Slide Library Committee—R. K. Alman, Cedar Rapids, Iowa

Nomenclature and Standards Committee — Dr. R. R. Hirt, New York State College of Forestry, Syracuse, New York

Shade Tree Evaluation Committee — Norman Armstrong, Chapel Hill, North Carolina

Public Utility Arborists Committee — Kenneth B. Flaig, Ft. Wayne, Indiana

Shade Tree Selection Committee—Edward H. Scanlon, Commissioner, Division of Shade Trees, Cleveland, Ohio

—Report of Convention Committees

—Election of Officers

—Recommendation for 1956 Convention City

—Old Business

—New Business

P. M.

Session Chairman, A. W. Meserve, Vice President, National Shade Tree Conference

2:00—*Human Relations in Industry*—Abbott D. Spaulding, General Personnel Supervisor, Illinois Bell Telephone Company, Chicago, Illinois

3:00—*Landscape Arboretum,* Clarence E. Godshalk, Director Morton Arboretum, Lisle, Illinois

4:00—*10 Questions—Panel Discussion*

Leader—Paul Tilford

Others—Four Commercial Arborists

Evening

6:00—Cocktail Hour — Century Room

(Continued on Page 28

PLANT AMERICA—WISELY

Tree Values and Income Tax Deductions

By O. W. Spicer
President, The Bartlett Tree Expert Co.
Stamford, Conn.

Given at the Meeting of Tree Wardens, Arborists and Utility Men at The University of Massachusetts, March 26, 1953

Some time ago I received a letter from Prof. Gordon S. King asking if I would not prepare a paper on tree evaluation to be presented before your conference of tree wardens, arborists and utility men. He asked that I not only give a talk on tree evaluation, but that I also endeavor to clarify, if possible, the various interpretations of the income tax law as it refers to deductions where hurricane and ice storm damage to trees is involved. I will endeavor to confine my paper to approximately 25 minutes in order that ample time may be left for a question period which Prof. King thinks is so important.

The Commonwealth of Massachusetts and the University of Massachusetts have always taken the lead in matters pertaining to trees. They have taken the lead whether it involved laws in respect to the care of shade trees or value of trees to the landscape or value of trees as a whole. It was in 1635 when the Town of Boston was incorporated that an ordinance was passed providing that trees planted in this settlement be protected from being "spoiled".

Much legislation has been passed since those early days in respect to the care of trees because of their value. Over the years there have been many ways in which established trees have been evaluted. No doubt what is known as the Dr. Felt Formula has received more publicity than any other. It was back in 1931 that Dr. George E. Stone of this institution or what was formerly the Massachusetts Agricultural College, had considerable correspondence with Dr. E. Porter Felt, deceased and formerly head of the Bartlett Tree Research Laboratories in connection with shade tree evaluation. Dr. Felt really pioneered in establishing values of shade trees. Having a formula seemed important because of the great number of claims which were being made by towns and property owners on account of the leakage of gas and the unintentional destruction of trees in this and other states. Dr. Stone in a letter in 1931 remarked that in his estimation a first class rock maple or elm 18 inches in diameter, breast high, would be approximately $150.00 when favorably located.

It is interesting to note the value of some trees in certain towns and cities. Bloomfield, New Jersey, early this year placed a value of $5,875,000 on its 23,500 shade trees which line the city's 78 miles of streets. According to the Bloomfield, N. J. Independent Press their individual value would therefore be approximately $250.00 average.

The city of East Orange, New Jersey, according to Harry Turner, Secretary of the Shade Tree Commission of that city, had a census taken a short time ago and the tree population was 23,000. Spot checking these trees and using the Spicer formula which is the Felt formula revised, he figured that the average dollar volume of the city owned trees to be $189.84.

In a recent letter from the Town of Greenwich, Conn., Joseph A. Dietrich, superintendent of parks and tree warden for the Town of Greenwich, one of the wealthiest towns in the country per capita, had a tree population of 60,000 municipal trees. He could not give me the exact value without considerable work, but he did remind me recently that the Book of Trees by Afred C. Hottes in 1932 using the Felt formula estimated that the shade tree value in all Greenwich was appoximately $25,000,000. He added, however, that this figure included both private and municipally owned trees. In a recent conversation with him he estimated that the 60,000 municipally owned trees would probably be worth $200 each or $12,000,000.

Placing values on Municipal Trees is of great value to Tree Wardens and Park Superintendents when asking for appropriations for tree care.

I have prepared for distribution a chart for evaluating trees according to the revised Felt formula. I will now attempt to show you just how this formula may be used for tree evaluation purposes.

The square inch sectional area of the tree trunk was chosen because it more nearly agrees with the increased value of the tree as it grows in size than any other measurement.

Dr. Felt used $1.00 per square inch as the basis in his formula. I feel that $2.00 per sectional square inch is a conservative figure to use in considering basic values because of inflationary factors. This is the first change in the Felt formula.

Next, we must give trees a rating according to their species. This rating will vary according to the section of the country in which they are growing. Everyone knows that in the Northeast a beautiful sugar maple is worth more to a property owner than an ailanthus tree or a catalpa. Some trees must be given a higher rating than others. I have four basic groups, in none of which are conifers included because their specific value differs widely.

To the first group I give 80 to 100 percentage points, i. e. sugar maple, scarlet oak, pin oak, beech and European linden. These trees are considered tops among our American varieties for the northeastern area.

Above them, however, I would place the white oak which as a lawn tree should be rated higher than the sugar maple. Some white oaks could well have a 200 percentage rating. Historical trees and many unusual trees may reach as high as 500 percentage rating. This is my second change in the Felt formula.

In the next category, alloting a percentage of 60 to 80, I would place these: The American and European elm, Norway maple, soft maple, tulip tree, London plane, magnolia and American plane or sycamore.

The third, category, with a percentage of 40 to 60, includes American linden, honey locust, ash, hackberry, hickory, red maple, horsechestnut.

The fourth group, with 20 to 40 percentage points, should include: Carolina poplar, cottonwood, black locust, catalpa and ailanthus.

After taking the basic value and species into consideration one must consider location, physical condition and residential value of the property.

The location of the tree is obviously a vital factor in determining tree values and may range from no reduction, from the 100% basic value, in the case of a tree standing upon a beautiful lawn off the living portion of your outdoor area or in an attractive park, to as much as 50% or 70% reduction or more if the tree is in a poor location so far as shade tree values are concerned. Naturally, there is a considerable range for the exercise of judgment in establishing this figure, though everyone will admit the need for taking this factor into account.

The physical condition of the tree has a most important bearing upon its value. There would be no reduction in the case of perfect shade trees, though these are relatively rare. In extreme cases the value might easily be reduced by 25% to 75%. In a few instances the entire value, or practically the entire value so far as ornamental or shade trees are concerned may have disappeared. The age of the tree is a factor under condition. Declining years of a tree reduces its value.

The residential land value is an important factor. This is another change

in the old Felt formula. This is quite different from what might be termed commercial or business land value for in such cases trees in such locations are a liability rather than an asset.

The valuation of a tree must take into account all of these factors, each being to a considerable extent a matter of judgment, and the better the judgment used, the more nearly correct the estimated value. The formula is so constituted as to make possible a reasonable valuation even in extreme cases.

A tabulation to aid those who wish to estimate tree values follows. Each item should be taken in turn, reading from left to right.

Diameter of Tree in Inches	Spicer Felt Formula Revised* Nov. 30, 1951 at $4,000 per acre	Nat. Shade Tree Conf. 1951 Basic value at $5.00 per square inch.
6	$ 134.40	$ 140.00
8	240.00	250.00
10	379.20	395.00
12	542.40	565.00
14	739.20	770.00
16	964.80	1,005.00
18	1,219.20	1,270.00
20	1,507.20	1,570.00
22	1,819.20	1,895.00
24	2,174.40	2,265.00
26	2,548.80	2,655.00
28	2,956.80	3,080.00
30	3,393.60	3,535.00

* All species, location and physical condition at 100% in Spicer Formula.

Much has been written in relation to evaluating shade trees.

All summaries point to the old Felt formula and the Replacement Formula. I have made no attempt to value a tree if it has been destroyed and the owner insists on some kind of replacement. One must see a nurseryman or tree moving concern to obtain a replacement figure.

This is my up-to-date tree evaluation formula. I do not consider it perfect and it may again have to be revised as time passes. Inflationary or deflationary factors of the future may play a part.

So much for the revised Felt formula. It should now be brought to your attention that at the 27th National Shade Tree Conference in Cincinnati, Ohio, as a result of the President appointing a committee to study tree evaluations, a report was made by that committee and accepted by the Conference, which some may consider to be more standard than the revised Felt formula. In this formula the factors used are very much the same as the factors just explained to you except that the committee recommended $5.00 per square inch to be used in determining the basic value of the tree. The location of the tree on the property is not taken into consideration on the evaluation work sheets and neither is the value of the property which seems to me to form an important part of any evaluation.

SPICER FORMULA —(FELT FORMULA REVISED)

Diameter of Tree in Inches	Basic* Value	Species Value	Location Value	Physical Condition	Residential Land Acre or Lot Value
6	$ 56.00				
8	100.00	5% to 100% or more	5% to 100%	5% to 100%	$ 1,000 Unity No Change
10	158.00				
12	226.00				2,000 increase by 50%
14	308.00				
16	402.00				4,000 " " 100%
18	508.00				
20	628.00				6,000 " " 140%
22	758.00				
24	906.00				8,000 " " 175%
26	1,062.00				
28	1,232.00				10,000 " " 205%
30	1,414.00				
32	1,600.00				12,000 " " 230%
34	1,814.00				
36	2,036.00				14,000 " " 250%
38	2,270.00				
40	2,514.00				16,000 " " 265%
44	3,048.00				
48	3,620.00				18,000 " " 275%
					20,000 increase by 280%

*Basic value equals $11R^2 \times 2$

11 equals 3.1416

R^2 equals radius (breast height) squared

If a tree is very unusual or a historical tree, or a tree especially planted, the basic value may be increased by several hundred per cent.

80-100%	60-80%	40-60%	20-40%
Sugar Maple	Europ. & Amer. Elm	Amer. Linden	Carolina Poplar
Scarlet Oak	Norway Maple	Honey Locust	Cottonwood
Pin Oak	Soft Maple	Ash	Black Locust
Beech	Tulip	Hackberry	Catalpa
European Linden	Plane	Hickory	Ailanthus
White Birch	Magnolia	Red Maple	
	Sycamore	Horsechestnut	

The committee does add however, "If you wish to consider matters not included in the formula such as effect of land value, or any other factor you believe to apply, go ahead and apply it." They also recommended that the President of the National Shade Tree Conference appoint a sub-committee in each region of the Conference to classify trees in each region in respect to the relative values of species and varieties. This would mean that in the mid-west a cottonwood tree might be evaluated at 80% because of possible value as a wind break, while in the east it might receive only a 20% evaluation because of species. Of course, the value of trees in the various areas of the United States do vary according to their adaptability in the various areas. No matter what formula anyone uses the better judgment the more correct will be the evaluation of the individual tree.

Tree appraisals are often indispensable as a basis in arriving at appropriations which towns and cities should request in their yearly budgets. They are also of great value when trees are suddenly destroyed and are covered by insurance. Tree appraisals may also be of value in arriving at a figure which will support tree appraisals made by a realtor before and after a storm.

I would now like to talk for just a few minutes in relation to the interpretation of the law in respect to casualty losses to shade trees resulting from hurricanes and ice storms.

Some of you may have heard J. Harold Duberson, Deputy Collector Instructor, Federal Bureau of Internal Revenue give a talk before the New Jersey Federation of Shade Tree Commissioners on December 2, 1952 at Atlantic City, New Jersey. He gave many helpful suggestions and I quote: "The Internal Revenue Laws are promulgated by Congress. Anyone reading the law realizes the necessity for interpretations. As a result of that the Commissioner of Internal Revenue issues Treasury decisions which are interpretations of the Law. The taxpayers and the representatives in some cases do not agree or do not concur with the interpretations as given by the Commissioner. Such cases are taken to the Tax Courts who decide for or against the individual who is bringing the case. Those court decisions become a matter of record and it points the way or the trend of thought during that particular time. The Commissioner does not necessarily have to concur if he feels that extenuating circumstances are present."

Deductions which the Income Tax payer tries to obtain are of two kinds. First as we understand it the taxpayer may take the amount of the invoice

(Continued on Page 34)

Several Aspects of Contemporary Street Tree Management

By Edward H. Scanlon, *Commissioner Division of Shade Trees, Cleveland, Ohio*

This paper was given at the meeting of the Massachusetts Foresters' and Tree Wardens' Ass'n Feb. 15, 1950.

For some reason vaguely buried in obscurity, shade trees, that is trees used for ornamental purposes on streets, highways, parks, and on home grounds or public and private establishments, have always been erroneously treated either as luxuries or as necessary abacadabra.

There is no such word as abacadabra in the dictionary and therefore it expresses to perfection the feeling, thinking and knowledge that pertains to shade trees today. They are such an important part of living, that every home in America, or the world, has probably an average of one tree on its grounds to make it more livable; a great many factories and manufacturing plants, especially those of recent vintage, use trees profusely to soften the ugliness of factory buildings; parks would be senseless without shade trees; even the most magnificent architectural masterpieces would soon become hard to look at if they were not augmented by the architectural perfection of trees. With all these facts—with the inherent knowledge of the human that he must have trees for shade and other purposes, what have we done, we, the people who plant and care for trees, what have we done toward fostering the intelligent selection and use of shade trees?

The answer is, as I see it, practically nothing. In the face of such a statement there should be facts. Such facts can best be brought out by comparison with other fields of tree use such as the fruit and lumber industries. While the misuse of ornamental species can best be pointed out on most streets in America and on most home grounds. On home grounds the continued use of the silver maple and Chinese elm (except of course in remote or unusual cases) and other species of similar drab and uninteresting character, is deplorable and is probably the result, as is the street tree situation, of a "what the hell" attitude, coupled, in many cases with a lack of knowledge of a wide range of species, and a lack of a sense for evaluating the best use for each.

The fruit industry, with a background of thousands of years, has made tremendous strides in the development of trees "to fit the space" and the site. The latest development is the dwarf form for small homes. Where formerly two or three or four fruit trees in an average yard was either an impossibility or soon became an aerial jungle, now the small home owner can have four or five or six trees with as wide a selection of fruit as he may wish. Some years ago an enterprising avocado grower developed an upright form, the "Graham" for small homes in California.

The problem in the lumber industry was not to fit the space, they have plenty of that, but they needed faster and more prolific production. This has been accomplished with many species and extensive experimentation is constantly under way. We have the ornamental trees at our beck and call to do all of the jobs we are called upon to do, but we have failed to acquaint ourselves with the diversity of forms, shapes and sizes of trees available. We have pyramidal and columnar uprights, small, medium and large globes, vase types, upright ovals, wide spreading, small and large umbrageous types, in fact we have every size, shape and form of tree with

Rapidly gaining in interest among Arborists and Nurserymen is the beautiful Japanese Keaki (Zelkova serrata) as a natural replacement for the American elm. It is resistant to Dutch elm disease.

every conceivable combination of leaf texture, foliage color, flower, bark character and fruiting habit to fit any situation we may be called upon to face. Another thing, I believe the provincialism that prevails in the thinking about natives is a deadening millstone around the neck of anyone so afflicted. It does not seem that the thinking applied to the use of natives in street and home situations is entirely sound. For example, when the word native is used, a picture flashes in the mind of a tree standing in one of the few remaining Massachusetts or Ohio forests, or any other State for that matter, growing under natural conditions with its feet buried in moist rich forest duff — its crown breathing in unsullied air. Where, under any artificial conditions such as those where we plant natives do these conditions exist—certainly not in the trampled, hard packed street borders and certainly not on a heavy, air, heat and moisture excluding lawn. Where then does the argument for natives get its substance—not in the soot and fume corrupted air of most cities. I do not believe the proper placement and use of trees can be effected by anyone afflicted with a fixation for natives. Our knowledge and thinking about trees must encompass the globe. Then and only then, will we be able to make sound selections for the greatest good.

A field where we have made practically no effort toward improvement is the relationship of trees and utilities. The utilities are concerned primarily with the sale of electric power. Their participation in the tree business, is to them a necessary evil. Lines must be cleared of damaging and overhanging branches and so, in order to keep peace with the public, who resent the butchering and destruction of highly desirable roadside and street trees, they hire the services of well known arboricultural concerns.

But, the butchery continues — the same today as twenty years ago—but, let's be fair, only a magician could make an American Elm perform its pre-ordained function under 35-foot wires. There has been no evident attempt by the tree people to find a sensible solution to this business that makes gargoyles of arboreal masterpieces, and the utilities, not knowing that there are tools with which to do a much better job, have to be satisfied. However, they continue to construct lines in, through or over existing trees, while tree planters continue to plant American elms, or some other such out-of-scale trees, under thirty-five foot lines.

What can we do? It is up to the arborist to suggest a solution. We have the trees, all we need is to apply intelligence to the evaluation of the space available and fit a tree to that space.

One of the most usefull of new street tree selections is this low round headed dwarf Norway maple. Called the "Almira" Norway it is advocated as an ideal tree for use under low wires and on narrow streets.

Cut down the butchered monstrosities and plant trees of a form that will not conflict. At the same time the utilities can exercise a little flexibility in their installations. They have been just as provincial in their method of doing things as the tree planter has in his.

There is ample flexibility in both the selection of a tree and the manner of installing a power line, street lights or trackless trolley, to insure an absolute minimum, and in many cases a complete absence of conflict. A little give and take on both sides can accomplish wonders. A common sense approach to the present utilities and trees conflict will result in better looking trees and roadsides as well as reduced operation costs to the utilities. This cannot be accomplished in one, five or ten years, but consider this. Where is the present aimless program headed, only to more of the same. It will require vision and effort by both utilities and public tree officials, as well as courage, to about face and to begin planning. Some of these days the utilities will recognize the value of correlating these activities. I believe the first gesture will have to be made by them. It would seem that a long-range program by the utilities to remove the conflicting trees and replace them, on sound arboricultural advice, with trees tailored to fit the space would be good business. Certainly it would be the beginning of the end of the present practice that can be likened to "buying shoes for a dead horse."

The Federal Housing Administration has recognized the value and need for trees on housing projects and all new houses. A tree must be planted in front of each new house before the contractor can complete his contract. But, the fly in the ointment is they specify no particular species. Realizing that this agency is nationwide it would of course be difficult to make a study of each individual home or project. However, if they were to issue a list of trees *not acceptable* by regions or climatic zones, it would be a step in the right direction. The contractor does not care what problems he imposes on the municipal agency who must take over maintenance of the street trees he must plant, consequently he buys the cheapest trees available, and usually these are silver maple, Chinese elm, poplar or some other such undesirable trees. Through our organizations we should attempt to correct this misconceived public benefaction.

There are several things in the planning and management of public trees that to me are still enigmas after twenty-five years of active interest and participation in the field. The first I have already discoursed upon at length—the great need for a much wider choice of species and forms. The second, is spacing, the third is the planting size for street trees.

The practice of planting a tree, or two trees, in front of every home, regardless of the lot size is basically

(Continued on Page 24)

Trees...

Cleveland's June 8 Tornado

A powerful "crash" truck with 75,000 pound winch, and a 25 ton crane lift a fallen giant.

A small section of the 100 miles of Cleveland streets completely covered by fallen trees.

This elm did a complete wrecking job.

One of five 25-ton cranes used in lifting 350 trees from houses.

PLANT AMERICA

All of the large Sycamores on this street were tumbled and made a real mess.

Norway maples with shattered tops. Few "small" street trees were uprooted.

This 4½' elm wrecked house across street. Two cranes were needed to load root on carryall.

More of the same—roots, roadway and sidewalks a jumbled mess.

NAA NEWS

By PAUL E. TILFORD, *Secretary*
Box 426, Wooster, Ohio

First Aid Kits

Whenever people engage in any activity, be it play or work, minor injuries are often experienced. Scratches, cuts, penetration by thorns and splinters, sawdust or dirt in eyes are a few such injuries to which the person working in trees is often exposed. Usually such injuries are slight and can be cared for on the job by a fellow workman provided he has a knowledge of first aid and that good first aid materials are on hand.

The first aider should never overestimate his ability. His purpose is to care for minor injuries and in case of serious injury to give only necessary and emergency treatment until a doctor arrives.

The National Arborist Association Committee on Safety has prepared the following statement on first aid materials for arborists. The committee is composed of the following: Karl Kuemmerling, Chairman, Karl Kummerling Associates, Canton, Ohio; Edwin E. Smith, Smith Tree Service, Lansing, Michigan; C. L. Wachtel, Wachtel Tree Science & Service Co., Wauwatosa, Wisconsin; J. Cooke White, Fred Ralston Co., Boston, Massachusetts; and John Woodruff, Oscar F. Warner Co., Waterbury, Connecticut.

Taking Care of Accidents on the Job

Most arborists' crews are familiar with first aid material and its purpose of caring for small injuries and giving temporary relief until proper care can be found. If we are doing our job properly, we shall have no need for first aid, but very few have reached that point of efficiency. Even if we have, there is still the chance that along the street, in the field, on the road to and from the job someone may be helped by means of your first aid kit.

The roll of bandage, the ten-cent roll of adhesive, and bottle of iodine or mercurochrome in the old cigar box has taken care of many minor cuts. Most any first aid training, or any doctor will tell you that such equipment isn't complete and is not very sanitary. Even if you add the tin box, dust and rain can enter and constant handling of the roll of bandage by men with dirty hands does not help sanitation. If first aid material is desirable, then only the best available should be used. And the best is not very expensive. A fairly complete first aid kit, the material of heavy metal, which can be sealed tight against rain or dust and with packaged units in neat individual boxes can be purchased at a very reasonable price.

For arborists, experience has indicated the following items as those most likely to meet the crew's needs.

The bandages that will take care of small cuts and bruises are the one-inch band aids. These are familiar to everyone. They may be impregnated with merthiolate or mercurochrome, the adhesive strip may be plain or waterproof, may have a short strip of adhesive or a long strip. The two-inch bandage can be used for larger cuts where the one-inch will not cover. One three-inch bandage is one in reserve for the cut from axes, hand saws or the chain saw. These do not have to be used very frequently but when the occasion demands they are indispensable.

If additional antiseptic is desired then the small ampoule which carries its own cotton applicator is good. Others prefer the larger tube containing 10cc of merthiolate because in the bigger cut more is needed than is contained in the small vial and when purchased in larger containers the antiseptic is not so expensive. Merthiolate is recommended by most doctors to be a good sterilizing agent and it does not discolor the skin.

Sawdust or other foreign matter sometimes gets into the eye. The eye packet with small round gauze pad which fits over the eye, with adhesive strips to hold it in place is very good. In the kit is also a small tube of boric acid ointment. This ointment relieves eye irritation.

Many times splinters and thorns get into the hands and legs and occasionally thorns get into other parts of the body. If not removed at once these often cause infection. A small needle-like knife in a plastic case and a pair of tweezers are almost necessary for this. The usual alternative is to use the pocket knife and this is poor practice.

Either the ammonia inhalant which is applied to the nostrils or the spirits of ammonia used in water and taken internally by the patient helps in case of nausea or shock.

Poison ivy lotion of some sort is always a must in a kit, but the trouble always has been to find a good remedy for poison ivy. Many have been tried and there is a new one every year which is absolutely the best. These are like their predecessors, good for some, seemingly not worth a nickel for others. Where there is no poison ivy, this of course can be omitted, but where is there no poison ivy?

Where poisonous snakes are a hazard a snake bite kit is desirable, but many arborists have found that it is best to have this in a kit which can be carried on the person of the foreman who is working with the men. Unless it is used very soon after the bite occurs it is not of much value. Usually this kit contains a small knife, some appliance for drawing out the poison from the area of the bite, and sometimes a tourniquet. A belt kit is the ideal container for these materials. It is made of light canvas with pockets and a strap which buckles in front like a belt.

Some kits contain a tube of burn ointment and there may be items which others have used for a particular purpose.

The ten unit kit should be large enough for the crew of from one to ten men. We carried triangular bandages for years until we found that we had never had an occasion to use them.

Kits are kept on the truck, but should not be carried away by the truck when it leaves the job. If first aid is not available when needed there is no use in having it. Men on the crew should not be allowed to carry any part of the kit home with them and if the foreman will watch, this can be prevented. Occasional inspection will make sure that the kit is always filled. The fillers can be purchased separately.

All those who have had first aid kits on hand will testify that they have many occasions to use them. Many men have been saved from serious trouble by the timely aid given by a fellow trimmer. We have had occasion to help a farmer who cut himself badly with a corn knife, another who had been dragged when his horse ran away with a harrow, and a third who had been gored by a bull. Two cases of relief to occupants of wrecked autos are recalled.

With the use of first aid material it is recommended also that the men on all crews be taught elementary first aid. All first aiders who have teacher's certificates must conduct so many classes each year or lose their certificate. They are willing to conduct classes for your crew without charge in order to keep their certificates in effect.

The matter of first aid kits and first aid training is important both to the crew of one or the company with a thousand men.

PLANT AMERICA—WISELY

Chemotherapy of Plants

By Nestor E. Caroselli,
Bartlett Tree Research Laboratories

This paper was given at the meeting of Tree Wardens, Arborists and Utility Men at The University of Massachusetts, March 26, 1953.

The treatment of diseased plants by *chemotherapy* (introduction of chemicals into the "vascular" system) has certainly come to the forefront in the past two decades. Its use has been responsible for the precipitation of numerous arguments for and against. Some feel that such a method is theoretically possible but often question its practicability. Whatever be the case, the chemotherapeutic approach for the treatment of plant parasites has become increasingly prevalent judging from the work that is being conducted on various plant diseases. It is not the purpose of this presentation to discuss the prevailing arguments on the relative merits of chemotherapy but rather to give a broad historical picture of this field as far as practical. I have endeavored to bring together various approaches of chemotherapy and since there are many I will limit the description of these to only those of historical interest and practical significance.

The idea of treating plants against certain parasites by introducing certain solutions into the vascular tissue by different means, is not a "brand new" idea. In the 15th century that philosopher, scholar, inventor and painter, Leonardo da Vinci proposed the theory that through the introduction of arsenic in the trunk of an apple tree the fruit of this could be poisoned. Da Vinci conducted experiments along this line with apparent successful results. Since that time numerous investigators have attempted to prove this theory employing a variety of techniques. The bio-chemist has attempted to ascertain the distribution of the poison through the protoplasm; the botanist proposed a relationship of the foreign material to the living entities of the plant; the zoologist worked with the idea of inoculating plants for plant parasites. All these workers were endeavoring to find some conceivable avenue to combat plant injuries. Records show that from the time of da Vinci in almost every institution of learning, investigations have been taken along these lines in one form or another. There are countless contributions on this subject in evidence today. Most of these can be looked upon as being small building stones, parts of jig saw puzzle, so to speak, each playing an important role in the development of the modern day aspects of chemotherapy. Thanks to the work of Dr. Adolf Muller of Frankfort auMain, and Dr. Roach of England, many of these pieces have been fitted together to form a somewhat complete picture.

For the sake of clarity I should like to briefly present a chronological historical picture of chemotherapy for the past 60 years under the four (4) different methods of plant chemotherapy.

I. Absorption of liquids through roots and stems of plants.
   A. Absorption through the stem—watery materials.

This was accomplished by introducing watery solutions or soluble solids into the sap stream by means of perforations in the bark. The methods by which materials were to be introduced into the tree by one or several openings in the bark were varied. The most common method consisted of cutting a hole with a chisel, which would reach into the woody tissue. Early tests employing this method were conducted on a hit or miss basis. Such chemical mixtures as cow or horse dung in combination with the juice of decayed leaves were placed in holes to assist in stimulating callus growth. Also some early horticulturists endeavored to impart different tastes to fruits by introducing into trees various sweet smelling chemicals. Although many workers have tried this method it was not until 1894 that a scientist by the name of Shevyrev worked out a treatment for the destruction of parasites by injection of dyes. He endeavored to find out a satisfactory injection method. This worker stressed that air should never be allowed to enter either before or during the injection operation. He felt that if air were allowed to enter the air bubbles would clog up many of the cut tissues of "pipe lines" of the tree. When this occurs there would not only be less liquid taken in by the tree but that it would also definitely affect its distribution. The technique employed by this worker consisted of placing a large water tight funnel-shaped apparatus on the trunk of the tree. The solution to be tested was then placed into this funnel-shaped apparatus. In order that the solution be allowed to enter the tree without air, a cut on the trunk reaching the active sapwood was made under the solution by a sharp chisel. Since the apparatus was bulky and cumbersome it did not find a place in practical application.

Several other workers have used a modification of the "funnel-method." For example, Dr. Caroline Rumbold in 1915, using different chemicals, attempted to treat the then wide spreading chestnut blight using a method similar to that just mentioned. There are numerous other reports on the use of chemicals to treat ailing plants internally by means of trunk injections with liquid solutions. A relatively recent modification of this was developed by *Caroselli* in 1938 while working for a practical treatment for Bleeding Canker Disease of Hardwoods. The importance of the exclusion of air has often been minimized. The writer, using various dyes, has found that when air is allowed to enter during the process of injection the rate of introduced material uptake in a tree is not only reduced but its spread is definitely restricted.

Introduction of Solid Material Soluble in the Sap Stream

Because of cumbersome equipment and difficulty in handling liquids most of the work on chemotherapy was done with solid materials which were solvent in the sap stream. We have for example, reported attempts of "curing or immunizing chestnuts from attacks of a fungus disease *(Coryneum pernisiosum)*. Perasino's work in which he strived to inject grapes against phylloxera using cyanide of potassium in dry form. The method of treating trees for chlorosis is not new for it was first tried around 1891 by a man named Dichi. This worker applied sulphate of iron in powder form in April. In 1901 two other workers experimented more extensively with materials to control chlorosis. They inserted iron sulphate in holes made in the trunk near the base of affected trees. In some cases the holes were bored slant wise through the entire trunk. These workers were of the opinion that for an equal distribution of the chemicals it was necessary that there should be crosswise channels. At least 1000 trees were treated by this method. In 1903 this method was employed and more exact quantities of materials were used. Four to 12 grams of material depending on the size of the tree were introduced. Apple, pear and oak trees have been treated successfully.

Apparently the first attempt to use chemicals in capsule form was in 1914 used by a worker named Samford. Capsules containing potassium cyanide, potassium chloride and iron sulfate were introduced in holes bored into the tree. The results using these chemicals for the control of *Icerya purchase* were not conclusive. We note the first reported attempts to control acacia borers were in 1915. At this time the State Entomologist of Illinois treated 50 Acacias 1" to 7" in diameter severely infested with the acacia borer, with 98% potassium cyan-

ide and sodium cyanide. Holes which were ¼, ½ and ¾" in diameter were filled with these materials and then the holes were closed by a stopper. The results on the use of cyanide materials have not reported to be very conclusive. It should be pointed out that since these materials are deadly poison they should only be handled by experienced men. Because of their lethal characteristics these chemicals can hardly find a place under practical field conditions.

II. Absorption of Substances by means of roots or branches cut at their terminals.

This method presents the same difficulties described for the introduction of substances in the bark. This method has been used as a chemotherapeutic approach for the control of plant diseases. One can readily see that cutting of one or two roots and producing direct absorption through them, or under pressure, is undoubtedly a method less injurious to plants. Yet one can readily visualize its limits of practical values especially under actual field conditions. This method has been employed in the past with negative results. Some of the earliest recorded work is that of Gaunsdorfer (1887) who used conifers and found that material could be carried up injured roots. In 1893 more work along these lines was done using sodium and iron chloride on maple trees and horsechestnuts. The procedure involved laying bare a root and immediately after sawing it off plunging it in a vessel containing the solution. Work has also been reported where materials have been introduced at the ends of cut twigs or branches.

III. Adding to the ground materials to be absorbed through intact roots.

The attempt to treat trees and vegetable plants by adding chemicals to the soil has been looked upon as one of the best treatments. This method dates back to the work of Meinke in 1924 and culminates with oxyquinalate and Carolate soil treatment of the dreaded Dutch Elm disease.

It has been recognized by horticulturists that the strengthening of plants by the addition of organic or inorganic elements to the soil, has often allowed better protection against parasites and diseases. Resistance to certain disease attacks often resulted when one or several elements were added to the soil. This stimulated the interest of several workers who speculated that perhaps plants could be treated for certain abnormalities by the addition of chemicals to the soil. Plants would take in these materials by root absorption. Although the literature abounds in reports on this method of chemotherapy we shall merely briefly review some of the more important experiments. In 1909 a researcher by the name of L. Hiltner was of the opinion that chlorosis of grapevines was frequently caused by a high lime content of the soil. He apparently had in mind that the roots were capable of absorbing cetrain available elements needed for normal photosynthesis. He, therefore, advised treating the soil around the vines with iron vitriol. He suggested that the ground around the stock should be saturated with a 10% solution of iron vitriol; with at least 5-10 liters for each vine. Another method also proposed by him was to use a compost containing iron vitriol, as a fertilizer. For this purpose he advised the use of refuse skins left over from wine making and iron vitriol crystals mixed together and piled in a mass up to about two feet high. This was really an ingenious method since it allowed the vitriol to percolate through the organic matter slowly, and thus be more readily available for plant use.

For another attempt at treating a plant disease by adding materials to the soil for the purpose of root absorption let us now turn to the work of Mr. Meinke. This gentleman who contributed much to the field of plant pathology in 1924 conducted several experiments for the control of "yellows" which appeared on Taylor grape. He prepared various mixtures of vitriol in dry and liquid form with 40% potash salts. Liquid mixtures were poured on the soil surface around the plants and allowed to percolate into the soil. The dry material was employed by placing it around the stock in circular fashion to about a distance 18" from the stock of the plant. To insure good mixture with and distribution of it in the soil the material was hoed in very carefully. The importance of careful hoeing should not be overlooked since deep hoeing will not only injure the root system but also retard the plants ability of absorbing added chemicals. Furthermore injury to the root system may quite conceivably increase the already existing defect. The chemicals were applied in the spring and the first observations were made on July 16th at which time it was observed that approximately 50% of the plants responded by exhibiting darker green leaves than the untreated plants. It is interesting to note that the best results were obtained by solutions of these chemical mixtures rather than by dry applications. Application of these materials had no apparent detrimental effect on the fruit set. However, it was noted that there was no apparent increase in the size of leaves on the chemically treated vines.

Further attempts to control chlorosis of grapes by a soil impregnation method was attempted by Mr. K. Muller in 1924. His method involved digging a trench around vines and filling it with 2-5 gallons of water containing 300 grams of iron vitriol. Apparently his results were encouraging.

In addition to saturation of the soil for the control of fungus, bacterial and physiological diseases various experimentors have endeavored to control insect infestations. The work of Green in 1924 involved the use of "phenol" for the control of the shield louse. To induce absorption through the roots the solution was poured over the ground. It was noted that one month following application the increase of the lice ceased whereas infestation on neighboring untreated trees had increased rather than diminished.

Also Low in 1924 experimenting with horse beans and buckwheat noted a decrease of aphid infestations on plants growing in soil treated with potash. Neighboring check plants were heavily infested. These observations were not observed by other workers. It is important to remark here that soil conditions may not have been the same in all tests. It might be well to carefully scrutinize the significance of this in reference to the soil chemotherapeutic treatment of trees in different geographical localities. For example the results one attains on the northeastern seaboard may not, because of soil conditions, be the same as those let's say in Ohio or states farther west.

I should now like to take the liberty of using a loose meaning of chemotherapy in order to make mention of at least one recorded work on the soil treatment of trees for the promotion of tree vigor. Every arborist is well aware of the importance of feeding trees knowing that healthy trees are apparently more resistant to disease infection and insect infestation. Man has for many centuries known the value of adding certain materials to the soil for the betterment of plant growth. Because of the urgencies of life he has concerned himself primarily with large plants and wheat plant types which furnished him with the "staff of life"—bread. He, therefore, because of necessity, often overlooked the requirements of trees which merely gave him lumber for his building, wagons, etc., and fruit for the table—they were merely taken for granted.

In about 1896 Roth investigated the state of the soil in which plants were grown. He used a combination of potassium nitrate, calcium sulphate, calcium phosphate, sodium chloride, magnesium sulfate and iron chloride. To control the entrance of micro-organisms he used various proportions of salicilic acid. This last chemical is one of the constituents of Carolate now being used for the treatment of the Dutch elm disease; this will be discussed subsequently. Mr. Roth's

work may be credited with opening the perspective that:

(1) By this method a tree may be increased in growth and yield, by soil applications of certain ingredients which may be lacking.

(2) It may be considered one of the first attempts of artificially feeding trees which are growing under somewhat artificial conditions—Here I have reference to most ornamental trees.

(3) The method certainly suggested the practicability of furnishing some of the essential elements in proper amounts of dosage for stimulating growth and assisting in the fruiting and blooming of fruit trees which grow in soils lacking these elements.

IV. Absorption of Materials Through Intact Leaves

In addition to the previously described method one is also known by which materials may be absorbed by intact leaves. We have recently heard about the Connecticut Agricultural Experiment Station employing such a method for the treatment of the Dutch elm disease. Apparently the results, although not yet conclusive, are somewhat encouraging.

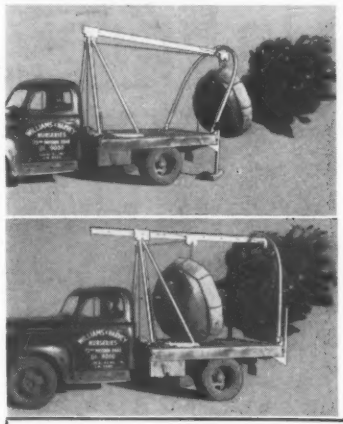
The idea of foliar absorption was recorded by L. Hiltner in 1909 who declared that higher terrestrial plants were capable of absorbing material through leaves. He reports to have successfully treated chlorosis of yellow lupins. This was accomplished by sprinkling leaves with a very weak solution of iron salts. Hiltner felt that the material worked into the interior of the leaves and there offset the chlorotic condition.

Modern Approach

Up to about 1938 most of the work in chemotherapy for the treatment of plant abnormalities was primarily concerned with the treatment of the fungus itself. A new approach was established which evolved the treatment of a toxin produced by a fungus. It had long been suspected that certain fungus diseases caused injury to plants by the activity of the fungus itself as well as by some of its products which were poisonous to the living cells of plants.

Various investigators have shown that toxic substances could be produced by such fungi as Fusarium sp., Penicillin sp. and the fire blight organism, *Bacillus amylovorous.* In 1886 a German by the name of de Bary noted that in certain cases broad beans, attacked by a fungus *(Sclerotinia Libertiana)* showed a killing of the cells before entry of the fungus proper. Many similar observations have been noted or suspected to be present in various plants particularly infected with vascular diseases. In 1939 Caroselli isolated the

(Continued on Page 30)



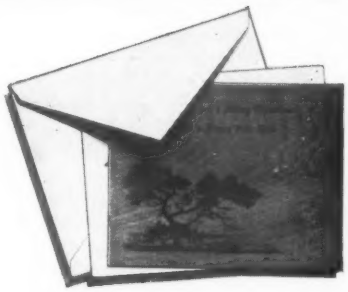
Williams & Harvey Nurseries Announce

NEW TREE MOVER

- New Light Weight
- Simpler to Operate
- New Sizes
- Quickly Demountable
- New Lower Costs

This improved new tree mover fits any standard truck. Ready now. For price and details, write at once to

WILLIAMS & HARVEY NURSERIES
P. O. Box 8822
Kansas City, Mo.



CARDS OF WOOD are sold direct
Write
CARDS OF WOOD, Manlius 8, N. Y.
for information

CARDS of WOOD
say
"GREETINGS"!
—in a more Charming way—

EACH card is made of a piece of wafer-thin PINE, CEDAR, HOLLY or other exquisitely grained wood. Your friends and clients will be delighted with your thoughtfulness in choosing CARDS of WOOD for CHRISTMAS GREETINGS, BUSINESS CARDS, ANNOUNCEMENTS and BOOKMARKS.

ARBORICULTURAL SUPPLIES

- H. K. PORTER and S. SMITH POLE PRUNERS
- REPLACEMENT POLES — SOLID and SECTIONAL
- ATKINS and DISSTON PRUNING SAWS
- SAFETY SADDLES — CLIMBING ROPE
- BRACING MATERIALS — TREE COMPOUNDS

Write for 72 page Catalog

A. M. LEONARD & SON
Established 1885 PIQUA, OHIO

NEW SAFETY BELTS

To meet the demand for a low priced safety belt we now have a tough rawhide belt selling for $7.50. Same design as our No. 1301, but lighter in weight. Our No. 1301 is now $14.00.

LUMBERMAN'S SAFETY HELMETS

Genuine MacDonald Aluminum Alloy safety helmets, the kind the lumbermen use. They look smart and protect your ground-men. Price $7.20 ea. All prices F.O.B. West Chester, Pa.

COMPLETE LINE OF TREE SURGERY SUPPLIES

Fruit Growers of Chester County, Inc.
West Chester, Pa.

An Innovation In Spray Applicators

Man through the ages, in his yearning for peace, has talked about beating swords into plowshares. Now he can talk about converting buzz-bombs into bug-killers.

This modern version is symbolized by a new, light, portable fog-maker tracing its origin to the German V-1 buzz-bomb, the weapon employed by the Nazis during World War II to terrorize Britain's cities. Bearing the trademark name of "Swingfog," the war-spawned device atomizes a standard pesticide into a dense, clinging fog for killing crop-destroying insects.

The device is being introduced in this country by Devenco Incorporated, of 150 Broadway, New York, North American licensees for the product's German developers.

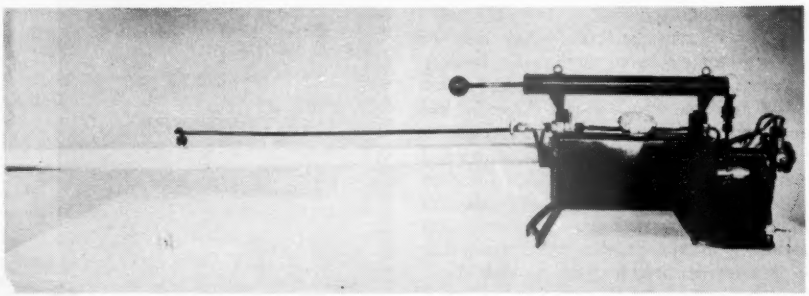
The history of "Swingfog" actually begins with the decisive Nazi defeat in the Battle of Stalingrad. That defeat was caused to a large extent by the savage cold of the Russian winter, which virtually congealed the internal combustion engines of the German tanks, mobile artillery and other weapons-on-wheels.

Spurred by the Stalingrad debacle, German scientists began work on an engine pre-heater. Taking a novel approach, they adapted the pulse-jet principle utilized in the buzz bomb to propel it across the English Channel.

The bomb was powered by an impulse duct engine mounted on the glider-like weapon's tail. This engine, one of the forerunners of today's jet planes and guided missiles, generated heat from combustion of a fuel-air mixture. As the heat escaped from the exhaust, it expanded, providing thrust.

The scientists' work stopped with the end of the war. Later, however, private German interests proceeded with the development work and perfected the system. These interests recently licensed Devenco to manufacture, sell and distribute in North and Central Americas.

The pulse-jet principle in the buzz-bomb, in addition to being applied to heating devices, was also utilized in developing the fog-maker. In "Swingfog," a gasoline-fueled pulse-jet heater generates an exhaust stream through a rifle-like tube. As the heater is operating, a pesticidal formulation is automatically injected into the end of the tube. When the pesticide-charged exhaust hits the atmosphere, the resulting condensation forms a fog composed of millions of poison-charged droplets. Since the heating period is of fleeting duration, pesticide potency is unaffected.



A view of the new spray applicator "Swingfog".

Besides the tube and heater, the device consists of insecticide and fuel tanks and a hand air pump. Weighing about 30 pounds filled, the apparatus is carried by hand, suspended by a shoulder strap.

It is started by momentary contact with a storage battery and by a few strokes of the hand pump. After the heater starts functioning, the device, providing its own ignition, operates automatically with the battery disconnected. Because of its portability and relative lightness, it can penetrate any terrain accessible to its operator.

"Swingfog" will operate one hour on one-filling of its fuel tank, which has a capacity of 1.2 quarts. The insecticide tank holds 4.2 quarts, enough for a half-hour's operation. During use, both tanks may be re-filled without using the battery for re-starting. The device covers two acres with pest-killing fog in less than 20 minutes. It will fog 35,000 cubic feet of enclosed space in five minutes.

Since "Swingfog" has only two, easily replaceable moving parts, maintenance is virtually nil and lubrication is unnecessary. Micron size of the droplets is easily adjusted to meet specified field situations.

The product also has interesting potentialities as a frost-fighter. Utilizing a suitable fog solution in the insecticide tank, it can quickly generate a fog cover to combat radiation frost that occurs when there is no natural cover, like clouds, to reflect heat radiated from the earth's surface.

Moreover, when the insecticide tank

(Continued on Page 34)

The "Swingfog" in action in a citrus orchard. It has fine nursery possibilities.

PLANT AMERICA—WISELY

The Best Soil Conditioner Still Comes Out of the Earth—Not a Bottle

7 REASONS "GREEN THUMB" ASSURES YOUR BECOMING A GREEN THUMB USER

1. 97% pure, organic sedge reed, bacterially high content.
2. One cubic foot makes upward to 50 cu. ft. of good soil, or 15 cubic feet of rich organic soil.
3. Excellent natural nitrogen—readiness to use—going to work at once.
4. Delightful flowing into the soil in handling—uniform structure creates maximum economy.
5. Normal moisture holding, with gradual delivery only to soil and plants assure the maximum in plant development.
6. A product processed, based on 30 years proven continuous operation, has a ph of 4.5 to 5.5, that is quickly, easily and economically adjusted to needs of any plant material.
7. The most efficient and economical soil building nature product in existence.

"Green-Up America With Green Thumb Peat"

GREEN THUMB PEAT-HUMUS CO.
CAPAC, MICHIGAN

EASTERN DISTRIBUTOR:

F. N. PRICE SUPPLEE, 1014 GIRARD TRUST BUILDING, PHILADELPHIA 2, PA.

Perpetuation of Forest Resources In the Western Pine Region

By Ernest L. Kolbe,
Western Pine Association

The timber supply picture in the 12-state Western Pine Region is a bright one, perhaps even brighter than in other regions! Striking gains in forestry on both public and private lands have been made.

Forestry progress is not generally understood. The general public reaction towards forest perpetuation is a mixture of endorsement and concern—endorsement for the new tree-growing programs and concern as to the future. This concern undoubtedly stems from the early crusades to awaken our nation to the need for forest conservation. Forty years ago there was a need for an awakening. Then, there was little or no protection against forest fires, insect epidemics, or tree diseases. Forty years ago there was very little forest management, hardly any foresters, and little practical experience on how to handle the woods. Colonel Greeley explained in some detail these early circumstances.

But much has happened since those days. There have been some real changes. Today in the Western Pine Region, which covers one-third of Continental United States, more than 75 per cent of the 80 million acres of commercial forest lands are under long-term forestry programs. That means that we are *growing* new tree crops while harvesting ripe trees for lumber. We are protecting forests better from fire. We are using the harvest better. Through applied research we are creating new products of wood with consequent new opportunities.

In estimating our timber future we must never forget the simple, basic fact that *trees grow*. When handled as a crop, timber becomes a resource as lasting as the most dependable agricultural cropland. Forests can go on and on.

All in all, we have ample tree-growing lands plus the know-how and equipment to grow the timber we need. Most important of all, private and public owners have the will and desire to grow crops of trees.

Of course, we have our forest problems.

Our number one problem in the Western Pine Region is the staggering loss we suffer due to the non-harvesting of high-quality over-ripe trees. When we fail to cut these old trees, they fall prey to insect attacks and tree diseases. They die and rot in the woods. At the present time we are losing several billion feet of fine timber annually. The solution to this problem is not easy as the old-growth forests still cover tremendous areas, many of which are inaccessible. However, real progress is being made in new systems of cutting, more flexible logging equipment, and road building. Also, research in insect control is giving us additional time to organize harvesting programs ahead of the tree killing insects.

In solving this, our biggest forest problem, we will be making available the highest quality logs for lumber. Taking out the doomed trees will also give more growing space and sunlight to the thrifty younger trees remaining and so produce more quickly the next crop.

There is an ever-changing picture in forest productivity. Virgin forests are more or less in balance over periods of time. As our forest picture changes from one of primeval forest to orderly managed forest, net growth on the new crop increases. The time for growing the next crop varies with the forestry plan and the original timber stand. On some forests repeat cuttings are at frequent intervals. On some, cutting cycles come every 20, 30, or 40 years. Normally, in the harvesting of the Western Pine forests a good nucleus of trees is left for the next crop. In many operations only the very largest and oldest trees are cut. Most trees under 20 inches in diameter and all young trees are left for future crops.

Ample timber supplies already grown give us time to have new crops of trees ready when they are needed in the future. It takes long-time planning, however, to take care of such crops as trees. Case histories will serve to illustrate what is being done in this direction in our region.

In 1913 the million-acre Klamath Indian Reservation forest with eight billion board feet of timber, mostly Ponderosa Pine, was put under management. About two per cent of this forest has been cut over annually. For ripe trees sold to the highest bidder the Indians received nearly $30 million during the 40-year period. Present earnings are around $2 million a year. The Klamath Indians have sold 4½ billion feet of timber since 1913, and still have 5-1/3 billion feet of sawlog timber left. It will take another ten years to cut over the virgin area remaining and then the full productive capacity of the forest will be unleashed. At that time average annual growth per acre will be in excess of 100 board feet and an annual harvest of somewhere between 70 and 100 million board feet should be possible indefinitely.

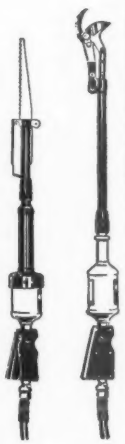
From a study of the virgin forests we can estimate what would have been the picture on the Klamath Reservation if no cutting had taken place. Surprisingly enough, with no cutting, the Indians would have little more timber

(Continued on Page 22)

see the complete
MILLER-ROBINSON
line of air-powered
TREE TRIMMING
Equipment at the
NATIONAL SHADE
TREE CONFERENCE
convention
La Salle Hotel, Aug. 17-21
Chicago
TWO BOOTHS, Nos. 8-9

The complete Miller-Robinson Limb Lopper line will be on display, including both line and brush clearing tools, tree saws, compressor units, fittings and accessories.

See them in action at the OUTDOOR DEMONSTRATION!



See the Miller - Robinson Limb Lopper line of air-powered tree trimming equipment that has saved arborists, tree surgeons, park superintendents and maintenance crews up to 50% in time and money, season after season, with unfailing dependability. There are tree trimming tools for every need, including insulated models for protection against electrical shock. Compressor units, fittings, hoses, connections and adapter equipment are available for compressor jeep, platform or tractor mounting. Distributors and service facilities throughout the nation.

Miller-Robinson Co.
7007 Avalon Blvd., Los Angeles 3, Calif.

BUY THE BEST— BUY KUEMMERLING

When you buy a boot buy it like you would a length of rope—the best. It will be more comfortable, will last longer, and you can resole it. Buy from the quality angle—not price. Ask anyone who has worn a K. K. boot, ※216—16" $15.00, ※229—10" $12.25, ※255X—16" $17.00. No. 225X has a composition sole.

Our K-24 still in good supply. For those who like Seymour Smith's ※624 or Atkins 3-14 Silver Flash, we have them in stock. For those who like a push saw, try our new K-8 or K-81. A real saw with gullets to take out dust in large cuts.

Our patented scabbered is still the longest wearing and handiest on the market. We will make one to suit you if you want a particular size or shape.

BUCKSKIN GLOVES

We have a buck skin glove that will really wear, costs a little more, but outwears any you have ever worn. It gets wet and dries out soft. Never stiff on the hand. Try one pair and you will order more. Sizes 9-10-11-Extra large 12.

First aid kit complete with sterile clean supplies. Refills for the kit.

Light adjustable spurs. Brooks $16.75, Bashlin $20.00.

KARL KUEMMERLING, INC.

401 CHERRY AVE., N. E., CANTON 2, OHIO

Ohio Distributor for Fitchburg Chipper.

(Continued from Page 20)

than they actually have today. How could this be after a $30-million harvest? Because they would have lost to insects over 3½ billion of the cut 4½ billion board feet of old-growth timber. But even more important the forest today would be unmanaged and far less productive for the future than the lands harvested under careful plan by foresters.

About 60 per cent of the commercial forest lands in the Western Pine Region are in national forests. There are 97 national forests in this Region growing crops of trees. The earliest of these national forests had their forest management beginnings at the turn of the century. None of them has at this date been fully opened up and gotten in full production. All have annual harvesting programs as on the Indian Reservation. Let's look at a sample national forest—the Malheur in Eastern Oregon. That tract is about the same size as the Klamath Reservation — a commercial area of over 800,000 acres.

Operations in the Malheur National Forest began in 1929 with a virgin stand of 7½ billion feet. The sustained annual cut is from 90 to 100 million board feet. Income from this forest in the 23 years from 1929 amounts to nearly $7 million. Present sales amount to $1½ million annually. Here, too, much good timber has been lost over the years but light cuttings now being made remove insect-susceptible trees. As forests are opened up by harvest cutting such losses will be reduced. Still, it will be many years before this forest gets into full production as much old-growth timber remains to be harvested. But, already the treated lands show good evidence that forestry pays.

Western states also have state forests that are being harvested under scientific forestry programs and are giving a good account of themselves.

The same experience—that forests respond to cutting treatment—is evident also on Tree Farms, lands on which private owners are growing successive crops of trees as a business. The Tree Farm program started in the Pine Region only eleven years ago, but already one-third of the private forests industrially owned are enrolled. In addition, hundreds of farmers and ranchers have joined the program and are handling their property under Tree Farm standards.

Tree Farming is a program that tackles tree growing as a business venture. It follows the old business system of getting the facts and planning a program fitted to such facts. It is concerned with results—results that mean more wood growth. It rates forest practices on the basis of their return for the time and money expended over the period.

AVAILABLE

Tree Maintenance Supervisor: 15 years experience includes training climbers and pruners, construction phases of park development, estimating, writing specifications and supervising contracts. "Safety Minded." Address J. Lind, care of Trees Magazine.

TREE BUSINESS FOR SALE

Including complete seven tool box truck, power saws, sprayer and other equipment. Unusual opportunity for well trained man.

Town of 60,000 Unusual

Gross business, one man, 52, $15,000. Selling price $10,000. Reason for selling, other interest. Further information upon request.

KNOWLES TREE SERVICE
1916 N. Franklin St., Colorado Springs, Colo.

CONTROL INSECTS WITH PRATT'S SPRAYS

Pratt's Sprays are formulated for use in mist or hydraulic sprayers to give the greatest degree of safety and effectiveness in the dormant spraying of shade trees and evergreens.

SCALECIDE—The oldest and best known dormant oil spray. Contains 96% highly refined, highly paraffinic, dewaxed oil. For greater safety and effectiveness in the control of scale and other over-wintering insects on shade trees, evergreens and ornamentals.

PRATT'S SUMMER SPRA-OIL—A miscible 97% white oil type summer oil. For use as a dormant oil spray on ornamentals, evergreens and conifers where a lighter oil is desired.

PRATT'S SHADE TREE OIL—A 96% superior type oil for shade tree spraying.

PRATT'S E-25% DDT—An emulsifiable DDT for use in water——DDT sprays.

PRATT'S S-30% DDT—A DDT solution in a solvent for use in oil——DDT sprays.

MEET MR. B. G. PRATT AT BOOTH 28 NATIONAL SHADE TREE CONFERENCE, CHICAGO

B. G. PRATT CO. Insecticides Hackensack, N. J.

IN PORTER'S *NEW* TREE TRIMMER ARE THE FEATURES YOU SPECIFIED

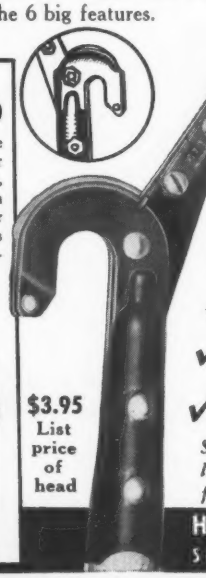
We asked the men who use tree trimmers what feature they'd specify for the perfect trimmer. Then we listened — learned — and put their practical suggestions into our new tree trimmers. Check the 6 big features.

YOU NEED PORTER'S ONE-HAND PRUNERS, TOO

No better one-hand pruners are made than Porter's DuraCut and DuraShear for work on shrubs, bushes, vines, etc. Equipped with Plastisol cushion Grips that won't slip nor blister hands. Positive thumb lock prevents pinching. Cutting blades of heat-treated alloy steel.

DURACUT (Anvil Type) for fast, easy cutting. **$2.75**

DURASHEAR (Shear Type) for close, clean cuts. **$3.50**



$3.95 List price of head

6 Big Features

- ✓ **All-steel heat-treated head.**
- ✓ **Special double steel hook practically eliminates bending, breaking, and twisting even when abused.**
- ✓ **Heat-treated alloy steel blade cuts easily — holds cutting edge.**
- ✓ **Pivot bolt stays tight and reduces friction.**
- ✓ **Spring located so it can't catch or interfere when cutting.**
- ✓ **Available with solid 8', 10' or 12' poles or jointed poles.**

See your supplier for complete line of Porter Pruners or write for catalog.

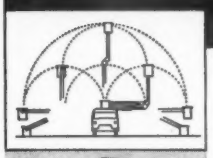
H. K. PORTER, INC.
Somerville 43, Mass.

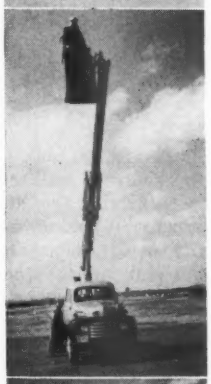
PLANT AMERICA

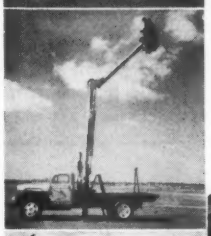
. . . it's the ELBOW

that makes the arm

flexible
efficient
versatile







HYDRO
SKY WORKER
(Formerly SKY LIFT)

. . . watch this giant arm flex at the elbow and effortlessly maneuver into the best position for a man to work aloft. There's no lost motion. Controlled from the crows nest, the hydraulically operated, articulated boom can be spotted to any location within its radius — forward, sidewards, backward, high or low.

Because SKY WORKER enables a man to approach a job from the *safest working angle*, on a *dependable, stable platform*, and in the *shortest possible time*, there is less fatigue, less hazard and tremend ously increased man hour production.

Compare

These Features:

- Double crows nest carries two men and equipment in any position.
- Completely insulated outer boom.
- Insulated molded Fiberglas crows nest, automatically level.
- Compact design allows maximum body space utilization.
- 42 ft. working height.
- 31 ft. working radius.
- 360° rotation.

One of our units can be scheduled for a demonstration on your job. Write for complete information.

We specialize in engineering your particular job requirements.

TEY MANUFACTURING CO.
MILFORD, CONN.

Partial List Of SKY-WORKER Users For Line Clearance Work

Asplundh Tree Expert Co.
Jenkintown, Pa.

Central Hudson Gas & Elec. Corp.
Poughkeepsie, N. Y.

Clark County P.U.D.
Vancouver, Wash.

Consolidated Edison Co.
New York, N. Y.

Georgia Power Co.
Atlanta, Ga.

Interstate Tree Service
W. Warwick, R. I.

M. J. Kelly, Inc., Tree Experts
Waterbury, Conn.

Niagara Mohawk Power Corp.
Albany, N. Y.

Ontario Hydro Elec. Power Com.
Toronto, Canada

Tree Care, Inc.
Buffalo, N. Y.

Snohomish County P.U.D.
Everett, Wash.

Sohner Tree Service, Inc.
San Anselmo, Cal.

Swisher Tree Service, Inc.
Spencerville, O.

Union Electric Co. of Mo.
St. Louis, Mo.

J. J. Felton & Son, Tree Service
Norwood, R. I.

Samuel Kinder & Bros.
Bristol, R. I.

L. H. Meader & Co.
Pawtucket, R. I.

Shade Tree Service Co.
Webster Groves, Mo.

Superior Tree Service
Arlington, Mass.

City of Sheffield
Alabama

Hawaii Electric Co.
Honolulu

City of Zurich
Switzerland

Gulf States Utilities
Texas

These units are equipped with Miller-Robinson pneumatic Limb-Loppers.

Shade Tree Management

(Continued from Page 11)

wrong. We all agree on that, we all condemn the practice. We know it has produced a backfire in the form of an overburden of trees to be maintained, for which we can never possibly obtain sufficient funds, and it has led to the defeat of the very purpose for which trees were planted, namely, embellishment. The result of too close planting is chaos and ugliness. None of the trees has sufficient space to develop its natural form and consequently beauty. All we see is a series of gaunt trunks topped by a maze of dead branches and a patch of foliage. Many city arborists will tell you that people insist on the planting including each property front. On the basis of my four years experience in Cleveland, (seven, now as this is published), in the planting of one hundred miles of streets, (now 190 miles), I can definitely say that anyone making such a statement has not chosen to make the effort to find out if it were possible to do the job correctly. We have had complaints, yes, but let me quote some figures. In the first year planting, 1947, we planted 3586 trees. We had 66 complaints. I called upon each of them personally. Of these 66 complaints about half did not want a tree in front of their homes. The 33 who wanted trees and did not get them were told why and agreed that we were doing the right thing. In other words, had we been panicked by the 33, as seems to have been the practice throughout the country in the past, we would be permitting one per cent of much less than one per cent of the people of our city tell us how to do a highly specialized job. I must add here that the councilmen and other high officials of our city have been sold this practice and because they know it is common sense and a turn about from the obsolete practices that have caused so much trouble, are now some of our most ardent proponents.

The third point, which is the planting size for street trees, is a subject wherein I disagree heartily with the status quo that prescribes at least a 2″ tree. The planting shock to a 2″ tree is out of all proportion to that suffered by an inch or inch and a half tree. Consequently, I have refrained from planting 2″ stock except in the case of a batch of Wheatley elms where I was unable to obtain smaller stock. These trees have been in three years and are still hard at work reestablishing themselves, whereas smaller stock has taken hold in one season and is much nicer looking and the loss has been negligible. Last summer, (1949) in the face of a severe drought the trees which required the least watering, and which we did not water at all, were the smaller stock. Some of these trees were ¾″ Morainelocust and Schwedler maples that had been planted in the previous spring. The fact that the larger calipered trees had not completely re-established even after three years, was conclusively demonstrated to some of our skeptics and they are now convinced that the smaller stock is the most economical and practical. As to vandalism, our experiences have been quite satisfactory. An example is the street of Globe-head elms planted last spring. Of 220 Globes, one was destroyed by vandals and two from planting shock. These trees were from stock we had top-worked in the spring of 1947. The tops (Ulmus carpinifolia umbraculifera) were worked on six-foot stems, 1½″ caliper, English elm (U. procera). Complimenting the Globes, on two inside planting strips, were planted 180 Wheatley elms (U. Carpinifolia sarniensis). The Wheatleys were 1″-1¼″ stock, none of these plants were lost. Incidentally, the Globes were planted at 55′, while the Wheatleys were planted to compliment light standards, a tree 25′ on each side of a standard. The standards are 150′ apart. This leaves an interesting hundred foot gap between every two trees. The pyramidal form of the Wheatley precludes any possibility of light interference on the pavement. We think this is an ideal functional street planting, combining a high degree of beauty in tree form; low maintenance because of the form; long life, and correlation of street illumination, and tree life.

A splendid functional street tree form—the Globe-head Elm (Utmus capinifolia umbraculifera). Several streets of this tree are making a splendid showing in Cleveland.

Without a doubt, routine maintenance is and shall continue to be an important, and indispensable phase of American street tree management in every city of today. But by far the more important of the two major phases, "maintenance of old plantings" and "selection and design of new plantings" is the latter. Through a system of wise selection, planting and care we can assure to our successors plantings requiring a minimum of maintenance while giving to city dwellers neat, orderly, beautiful streets for better living.

29th
NATIONAL
SHADE TREE
CONFERENCE

Hotel La Salle
CHICAGO
Aug. 17-21

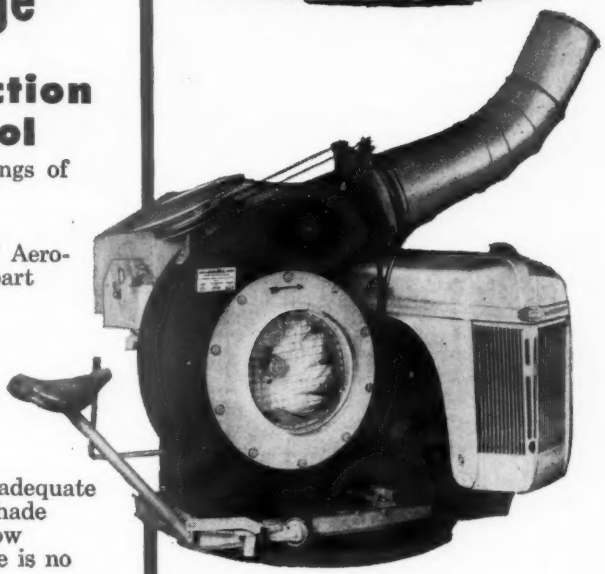
Cut spraying cost in half with...

HARDIE

AERO-MIST

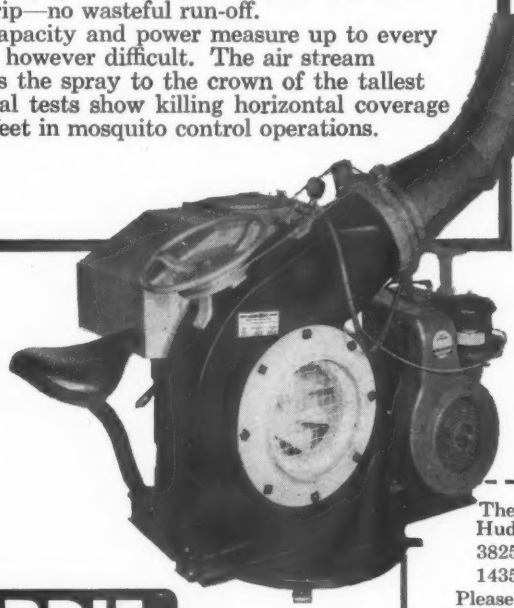
"Full Circle Coverage"

For Shade Tree Protection and Mosquito Control



- ECONOMY—Municipal records show savings of more than 50% in labor and material cost by Aero-Mist concentrate spraying.
- EFFICIENCY—"Full Circle Coverage" of Aero-Mist assures thorough application on every part and surface of trunk, branches, leaves.
- SPEED—Big volume high velocity air stream, finger-tip controls and 360° revolution of both entire sprayer and also air outlet make quick work of the biggest spray jobs.

With Aero-Mist any municipality can afford adequate shade tree pest control. Complete, lasting, shade tree protection is accomplished quickly, at low cost. Spray any place at any time for there is no damaging drip—no wasteful run-off. Aero-Mist capacity and power measure up to every requirement however difficult. The air stream easily carries the spray to the crown of the tallest trees. Official tests show killing horizontal coverage up to 1000 feet in mosquito control operations.



" a whale of a sprayer!"

TWO SIZES

Model L80—8000 cu. ft. air per minute at 150 MPH, 42 HP engine, high pressure pump, 53 gal. steel tank, 10 inch air outlet.

Model L40—4000 cu. ft. air per minute at 125 MPH, 13 HP engine, high pressure pump, 26 gal. steel tank, 8 inch air outlet.

Ask your Dealer

•

Use the coupon

HARDIE
PEST CONTROL EQUIPMENT
• SOLD AND SERVICED ALL OVER THE WORLD

Air Blast Sprayers, High Pressure Sprayers, Dusters, Rain Control Portable Irrigation Sprinkler Systems.

The Hardie Manufacturing Company,
Hudson, Michigan.
3825 Santa Fe Ave., Los Angeles 58, California
1435 N.W. Northrup St., Portland 9, Oregon.
Please send catalog.

Name_____

Address_____

City_____ State_____

I am especially interested in_____

INTERESTING TREES AT ALHAMBRA CIVIC CENTER

WOODBRIDGE METCALF
Extension Forester
University of California

A few days ago I spent a little time with Postmaster Everett Stanford inspcting some of the fine old trees on the grounds at 123 First Street, now known as Alhambra Civic Center. The old house is said to have been built about 75 years ago and the original owners must have been fond of trees from far parts of the world as the trees appear to have been planted about that time. They have not only grown to large size and beauty but they give the place a decidedly international aspect because of the far places of the globe from which they came.

AUSTRALIA is represented by a 100 ft. specimen of Bunya Bunya, *Araucaria Bidwillii,* and a good sized tree of Silk oak, *Grevillea robusta.*

NEW ZEALAND has the distinction of being the homeland of the tallest tree on the grounds. This is an unusually beautiful and rare specimen of the conifer with broad leaves and smooth bark which is called *Agathis robusta.* It has been an important timber tree in New Zealand where the lumber was sold as Kauri Pine. It stands near the front of the house.

EUROPE has supplied a tree of the famous English or Flemish Oak, *Quercus Robur* which stands on the lawn north of the house. It is not a large tree but has a broad, rounded crown of sturdy branches and bids fair to become a massive tree in the future if given adequate care.

ITALY has provided one of its best known trees to this collection—a tall, slender tree of Italian cypress, *Cupressus sempervirens* — notable for its dense, narrow and upright form.

CANARY ISLANDS. A fine palm from these Islands is a broad spreading relative of the date palm known as *Phoenix canariensis.* This species is one of the most widely used palms throughout Californian coastal areas.

INDIA has provided the well known and loved Deodar cedar, *Cedrus deodara,* from the Himalayas, now one of the best highway and ornamental trees in California.

SOUTH AMERICA is represented by a large specimen of pepper tree, *Schinus molle,* notable for its broad crown of weeping, finely-compound foliage and old-rose colored tiny berries.

CHINA has contributed the row of small Chinese privets, *Ligustrum lucidum,* on the parkway of First Street. These are hardly noticeable under the crowns of some of the other very large specimens.

NEW
Marvin Pruners

THE ANGLE HOOK

The PS1 Angle Pruner was designed primarily for the Orchard Man and others who are particular about where and how a limb is cut off. The shear is mounted at a thirty degree angle to the handle or pole. This design allows a close clean cut to be made no matter what direction the limb protrudes, up, down or to the side.

The lever is now mounted on the handle about 16 inches below the shear so there will be no interference by surrounding limbs when working in tight places.

The construction and material used in this shear is practically the same as is used in the PH2 straight hook.

The PS1 Angle Pruner is mounted on a 1⅛" x 1¼" wood handle without changing the shape of the wood.

PH2 PRUNER

SPECIFICATIONS THAT MAKE THE MARVIN PH2 PRUNER THE BEST

Working joints are clevised instead of riveted from one side and are pinned with grooved pins that are held in place by snap rings. This design allows easy and quick replacement of parts in the field. The only tool needed is a ring remover and a spring remover. We furnish these tools at a nominal charge or a makeshift tool can be made by the user without much trouble.

WRITE FOR PRICES

The Fred Marvin & Associates Inc.
1968 Englewood, Akron 11, Ohio
Manufacturers of Handee Fruit Pickers

FORMOSA and JAPAN are the native countries of origin for the bright-green shiny-leaved Camphor tree, *Cinnamonum camphora,* which was the source of the camphor of commerce until synthetic camphor largely displaced it. This species is a favorite street tree in many California cities.

THE EASTERN UNITED STATES is the home of box elder, *Acer negundo,* of which there is a large tree near the driveway south of the old residence.

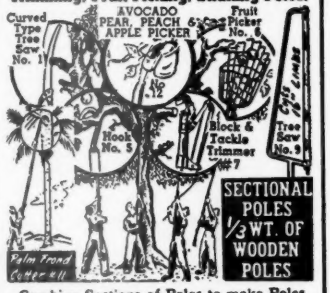
The only native California species on the grounds is a tall specimen of California fan palm, *Washingtonia filifera.* It is the tree of desert canyons which gave the name to Palm Springs and other desert places with palm names.

All of these trees can be seen in this one small area within a block of Alhambra Post Office. The people of Alhambra may well be proud of these fine old trees and others which are to be seen in the grounds of old residences and along its streets.

BE THERE

29th
National Shade Tree Conference
Chicago—Aug. 17-21

DON'T RUN SPLINTERS INTO YOUR HAND
• DON'T BREAK YOUR NECK! PREVENT ACCIDENTS!
CUT LABOR COSTS 40% to 50%
DOUBLE PRODUCTION! With the New, Amazing, LIGHTWEIGHT ALUMINUM Comb. Sawing, Pruning, Trimming, Fruit Picking, Shaking Poles.


Curved Type Tree Saw No. 1
AVOCADO PEAR, PEACH & APPLE PICKER
Fruit Picker No. 6
Hook No. 5
Block & Tackle Trimmer No. 7
Tree Saw No. 9
SECTIONAL POLES ⅓ WT. OF WOODEN POLES
Palm Frond Cutter #11

Combine Sections of Poles to make Poles up to 80 ft. tall. Weighs 1 lb. per 5 ft. Attachments extra. FOB Los Angeles. No breakage, no splinters, lasts forever. Sections 2 to 30 ft. Reaches top of any tree. 60 ft. pole weighs 12 lbs. SEND FOR
FREE CATALOG & FREE BOOKLET
HOW TO PRUNE FRUIT & SHADE TREES
TELLS YOU HOW TO INCREASE THE QUALITY and QUANTITY of Your FRUIT as Well as the BEAUTY OF YOUR TREES.
J. B. O. Schaell corp
300-S. Los Angeles St.
Los Angeles 13, Calif. - MA. 6-939.

2 Drums of Pennsalt DDT Emulsion 34 have the effectiveness of 3 Drums of 25% emulsion!

Why buy 3 when 2 will do the job?

In every gallon of Pennsalt DDT Emulsion 34 there are *three full pounds* of DDT. As a result, two drums of E-34 are as effective as three drums of ordinary DDT emulsion!

For sprayers, this means less solvent used per pound of DDT, less run-off or drip of active insect-killing material. You also handle less, transport less, store less.

You'll find Pennsalt E-34 is a stable emulsion that mixes easily with hard or soft water, and can be used in all types of equipment. It is convenient, economical, highly effective. Try it and you'll use it regularly! To get complete information on E-34, mail the coupon today for a free Pennsalt service bulletin.

Pennsalt Chemicals

Philadelphia, Pa. • Tacoma, Wash. • Bryan, Tex. • Portland, Ore. • Los Angeles, Calif.

FOR MIST BLOWERS —Pennsalt E-34 is ideal. It contains less solvent per pound of DDT, thus solvent-damage to foliage is minimized. Has excellent "carry," needs no white oil (although an oil carrier may be added if desired). Stores well at low temperatures. Mixes easily, and forms a stable emulsion in all proportions. FREE BULLETIN. Latest information on mist blower application of E-34. Use coupon at right.

Agricultural Chemicals Dept.
Pennsylvania Salt Manufacturing Company
262 Widener Bldg., Philadelphia 7, Pa.

Please send me free

☐ *Bulletin #201 on hydraulic application.*
☐ *Bulletin #128 on mist blower application.*

Name.....

Address.....

City.....**State**.....

Shade Tree Conference

(Continued from Page 7)

7:00—Annual Banquet—Entertainment and Dancing—Grand Ballroom

Friday, August 21

A. M.

9:30—*Utility Arborists Problems and Policies* — Stephen G. Pugh, Southern Bell Telephone and Telegraph Company, Decatur, Georgia

10:00—*What We Have Learned About Mist Spraying,* George Tirrell, Turners Falls Road, Greenfield, Massachusetts

11:00—*Some Interesting Plant Materials in Europe*—Dr. L. C. Chadwick, Dept. Horticulture, Ohio State University, Columbus, Ohio

11:45—Adjournment

LADIES' PROGRAM

NATIONAL SHADE TREE CONFERENCE CONVENTION

Ladies Headquarters—Parlor C, Mezzanine Floor

Monday, August 17

A. M.

9:00—Registration — Mezzanine Floor

P. M.

1:00—*Trip to Chicago Art Institute* World Famous Thorn Miniatures

4:00—*Friendship Forum and Punch Party*—LaSalle Hotel

Evening

8:00—*Informal Party and Barn Dance* — Century Room, LaSalle Hotel. Sponsored by Midwestern Chapter, National Shade Tree Conference.

Tuesday, August 18

A. M.

8:00—Registration — Mezzanine Floor

—Time for Shopping

12:00—Luncheon, Century Room, LaSalle Hotel

Entertainment — Lenn Redman, Caricature Artist

P. M.

6:00—*Chicago at Night Tour* Dinner in Chinatown

Wednesday, August 19

A. M.

9:00—Tour of Greater Chicago ending at Jackson Park

P. M.

12:30—Luncheon at Jackson Park

1:30—Visit Commercial Demonstrations and Contests—Jackson Park

—Visit Chicago Oriental Institute and Rockefeller Chapel

Evening—Open

Thursday, August 20

A. M.

7:00—*Don McNeill's Breakfast Club*

P. M.

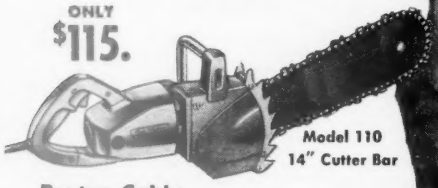
—Time for shopping

Evening

6:00—Cocktail Hour — Century Room, Mezzanine Floor

7:00—Banquet and Entertainment —Grand Ballroom

MORE POWER for the tough cuts!



Porter-Cable Electric CHAIN SAW

Powerful ● Fast ● Compact ● Light. Easy to handle when you're high in a tree, hampered by awkward footholds . . . or hedged in by thick underbrush when clearing woodlots.

Model 110's husky 10 amp. motor turns the chain at 1400 ft. per min. . . . more than enough slashing energy to bite through the hardest woods. Can be used to fell trees up to 28" dia. Oregon ® Chipper Chain's hard-chromed teeth stay sharp longer—are easier to file because they're hollow-ground. Weighs only 18 lbs. (extremely light for a saw of this capacity.)

Curved gripper teeth and tilted blade make the Model 110 *pull* itself *into* the work. Won't buck out or to either side—more advantages when sawing in difficult locations. Summer or winter, you merely press the trigger to start . . . all year 'round, your maintenance troubles are over.

More facts? MAIL coupon today!

PORTER-CABLE Machine Co.
1348 N. Salina St., Syracuse 8, N. Y.
(In Canada: Strongridge, Ltd., London, Ont.)
Send free folder on your new low-cost Model 110 Chain Saw . . . also name of nearest dealer.

Name.....

Address.....

City.....County.....State.....

Manufacturers of SPEEDMATIC and GUILD Electric Tools

"Spur-Stay" As New Climbing Aid

A new product that appears to have a bright future among tree climbers who use spurs is a device called "Spu-Stay."

The product is a combination climber pad and *locking device* which controls "backthrust" and "twist" of the leg iron. This eliminates the major cause of discomfort.

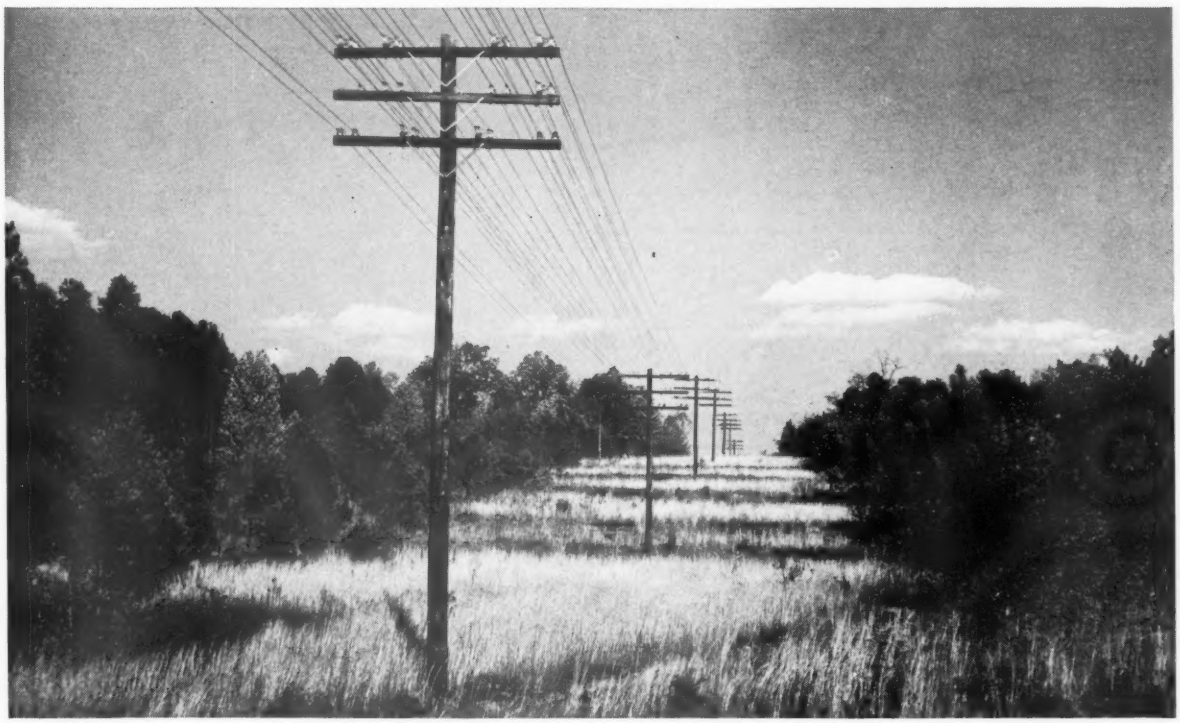
The "Spur-Stay" is constructed of lightweight malleable metal encased in durable leather with felt pad 3" wide by 9" long. There are three models—"S"—for standard width leg irons and Klein adjustable Model "N"—for narrow or lightweight leg irons. Model "A"—for any adjustable climber except Klein.

PLANT AMERICA—WISELY

DOW

DOW PRODUCTS GIVE SIMPLIFIED, ECONOMICAL VEGETATION CONTROL

ESTERON BRUSH KILLER • ESTERON 245 • ESTERON TEN-TEN and DOW SODIUM TCA 90% aid right-of-way maintenance



When maintenance men and spray service organizations think of chemical brush control on right-of-ways, they think first of Esteron® Brush Killer. Dow research and manufacturing experience have gone all-out to make it the best product in its field. Research like this improves know-how for Dow as well as for manufacturers of special-purpose spray equipment, and for persons responsible for selecting chemicals for vegetation control.

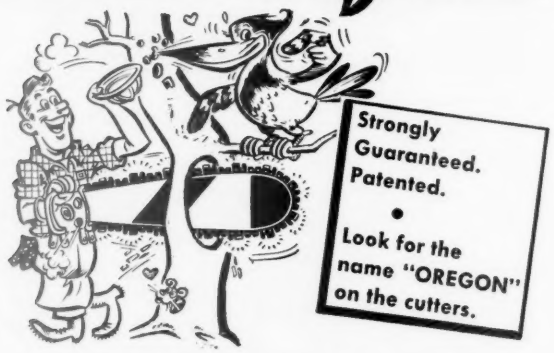
Esteron Brush Killer contains the highly effective, low-volatility propylene glycol butyl ether esters of 2,4-D and 2,4,5-T. It gives good control of alder, ash, birch, brambles, cherry, elm, hickory, maple, oaks, osage orange, poison ivy, sumac, willow and other species of brush and trees. For solid stands of certain 2,4-D resistant species, use Esteron 245 containing low-volatility esters of 2,4,5-T. For effective control of weeds, use Esteron Ten-Ten, new low-volatility 2,4-D ester weed killer. For grass control, use Dow Sodium TCA 90%.

You are invited to look to Dow for a complete line of vegetation control chemicals. A wealth of technical information and assistance is yours on request. THE DOW CHEMICAL COMPANY, Agricultural Chemical Department, Midland, Michigan. In Canada: Dow Chemical of Canada, Limited, Toronto, Canada.

you can depend on DOW AGRICULTURAL CHEMICALS DOW

Please Mention TREES When Writing Advertisers

Wish I Could Bore Like
OREGON Chipper® CHAIN



For boring...for cutting through knots, burls, twisted grain...for ripping or crosscutting hard or frozen timber...for any tough felling or bucking job, you can't beat genuine hard-chromed OREGON Chipper Chain on any make of saw. This fast, sturdy, easily-filed chain handles any cutting job, increases any saw's efficiency.

Copyright 1953 by Oregon Saw Chain Corp.

SEE YOUR DEALER OR WRITE FACTORY FOR DETAILS

OREGON
Saw Chain Corp.
SAW CHAIN SPECIALISTS
8816 S. E. 17th Ave., Portland 2, Ore.

USE BARTLETT SAWS

No. 124B — 24" Special Fast Cutting Utility Saw
No. 114B— 26" Special Fast Cutting Utility Saw
No. 114—26" Rapid Cut Saw (Snap Extra)
No. 44 Pole Saw
No. 45 Pole Saw

TREE SURGERY SUPPLIES
TRADE MARK CONTROUND
Bartlett Mfg. Co.
3028 E. Grand Blvd.
Detroit, Mich.

Write now for details and complete catalog.

Chemotherapy

(Continued from Page 17)

fungus *Phytophthora cactorum* from Maple trees suffering from a peculiar dieback. This fungus was proven to be responsible for the Bleeding canker disease of Hardwoods. During the course of experiments it was noted that the fungus produced a toxin. This was determined by noticing the wilt of young maple cuttings placed in tubes containing the fungus extracts. The fungus was grown in different nutrient media with the production of toxin in each where the fungus could grow. It was noted that under field conditions the tops of the trees appeared sickly as evidenced by sparse, off-colored foliage and dieback of the twigs. Yet, the only outward indication was the presence of small fissures on the bark out of which oozed a reddish-brown watery fluid which upon drying resembled dried blood in color. Was this localized fungus producing a poisonous substance responsible for dieback of the top? Subsequent experiments involving the injection of laboratory prepared toxin substantiated this suspicion. Since this was the case and since outward foliage symptoms were generally confined to the top portions of the trees immediately above the trunk cankers, it was speculated that perhaps the disease could be attacked by internal therapy. The next step was to test several chemicals in the hope of neutralizing the toxin. A chemical combination which could do this and yet not be injurious to the tree was found. It was a combination of Helione orange and Malachite green; known as Carosel. Modifying Shevyrev's method, mentioned previously, an injection method was developed and was subjected to practical field application in 1940. This chemical which inhibits the fungus growth and neutralizes the fungus toxin was injected into thousands of trees with encouraging results. Over 70% of the treated trees have responded favorably by showing longer terminal twig growth and thicker green foliage than untreated infected trees. We should stress here that the fungus is not killed in the tree but merely arrested and then the hose may overgrow the infected area. To the physician the patient's response to treatment is evidenced by his good healthy color and return of normal physical condition. Similarly the favorable response to the injection method is normal appearing symptoms described above. We should point out here that trees too far gone should not be treated.

A similar approach to the work just described has been made on the Dutch elm disease by the workers at the Con-

THE O'BRIEN STUMP REMOVER

THE O'BRIEN STUMP REMOVER IN OPERATION

A powerful answer to one of the slowest and costliest of municipal Street Tree problems.

Comprising power with a finely tooled series of three cutting bits—2", 8" and 15" in diameter.

This new development will cut stump removing costs to unbelievable low figures.

Write for Showing of a Special Movie—See This Cost-Cutting Machine in Action

The O'Brien Stump Remover Co.

90-39 54th Ave. **Elmhurst 73, New York**

Make good that time you lost during bad weather

WITH A Wilton PATS. PEND. MOTOR-DRIVEN BRUSH SAW

--at less expense

One man with a Wilton Brush Saw clears more brush than six men with axes and brush-hooks! He'll cut tangled briers, brambles, vines, underbrush, saplings, second growth *horizontally at ground level* — safely, quickly, cleanly. Wilton Brush Saw's light weight, perfect balance, high power and easy mobility are the perfect combination for clean cutting with a minimum of labor and time.

The Wilton Brush Saw is *safe* to use — easy to guide and control, and fool-proof because of simplicity of design with a minimum of moving parts and light weight.

Rugged motor and husky V-belt drive Wilton's non-clogging 8" or 10" saw blade at 3500-4000 r.p.m. at maximum power. No gears to strip — nothing to oil — and built so operator uses both hands to guide its razor-sharp, high-speed blade through all growth up to 4" in diameter. The Wilton Brush saw cuts down worker fatigue, too — speeds tough clearing jobs, and pays for itself in a month or less. Economical to use, and sensibly priced to fit forestry budgets.

FOB, Milford, N. H. $295.00

SPECIFICATIONS

Automatic recoil starter
Blade set at 10° for cutting
Simple centrifugal clutch
1.3 h.p. engine, 3500-4000 r.p.m.
Push-button stop control
Weight, under 30 pounds.
Shoulder strap distributes weight.
2" tubular aluminum shaft with 1/16" thick wall
Entire saw fits in car trunk.
Bearings sealed in oil
Aluminum shield against thigh for perfect balance, easier guiding.

Lower your Christmas Tree cutting costs by 50%
Write for data on sugar-maple tapping attachment

MANUFACTURED BY Williams & Hussey MACHINE CORP.
31 Clinton St., Milford, N. H.

necticut Agricultural Experiment Station. They found that the Dutch elm disease fungus also produced a toxin. They also found that several chemicals were capable of antidoting this toxin. Believing that better distribution and possibly better uptake could be obtained they employed the root absorption method. One can understand with such a systemic disease as the Dutch Elm disease this approach appears practical. This would not perhaps have the same practical application for the Bleeding canker disease fungus whose source of toxin production is localized. The Connecticult workers succeeded in obtaining encouraging results through the soil application by a hydraulic machine, of a chemical (hydroxyquinaline benzoate) known commercially as "Queenate."

Then in 1937 we saw the chemotherapeutic investigations of E. M. Stoddard in controlling the X disease of Peach.

At about the same time Feldman and Caroselli and Howard began their experiments at the Rhode Island Experiment Station and Bartlett Tree Research Laboratories, with the Dutch elm disease fungus. They, like the Connecticut workers, also found that this fungus produced a toxin and that it could be antidoted by a combination of chemicals including a basic material to which is incorporated, salicylic acid, urea, and an azo compound. This therapeutic chemical known as Carolate is applied around trees by the subsoil impregnation method using a hydraulic spray machine. Experiments with over 2,000 laboratory trees and over 3,000 large elm trees, growing in various parts of New England, New York, New Jersey and Pennsylvania showed results that have been better than 53%. Trees showing 5% or more wilt at the time of treatment have been found in most instances, useless to treat. The favorable response to treatment previously mentioned has been noted yearly for the past three years. The method is most encouraging.

Work in chemotherapy is continuing, (1) at Connecticut Agricultural Experiment Station and Rhode Island Agricultural Experiment Station on Dutch Elm Disease and Diseases of Garden Crops, and (2) at Brown University and the Bartlett Tree Research Laboratories on Maple Wilt. Recently interest in this field has been stimulated as a possible treatment of the Oak Wilt. These and others clearly indicate that chemotherapy is forging ahead.

At this point some of us may be wondering how a plant responds to inner therapy? What are the mechanisms involved? Although I present the fore-

going ideas on a purely theoretical basis, certain facts have been substantiated. From a practical standpoint the Horticulturist is anxious for the best results regardless of whether chemotherapy may directly or indirectly affect the plant so that it may combat certain plant abnormalities.

From the data available it appears that injected plants may undergo artificial changes of the interior resulting in the production of a temporary resistance against certain parasitic and non-parasitic disease. The possibility of accomplishing this will be greater when we further investigate what variety of materials, even in the minutest quantities, exhibit a fungicidal or bactercidal effect. We now have available information that such metals as copper, mercury, silver and their salts introduced into the sap stream of plants can result in resistance to certain parasites and indeed in some instances kill those already present.

2. Perhaps the addition of therapeutants in the soil may be indirectly responsible for greater absorptions of elements which can act in neutralizing poisonous biproducts given off by parasites.

3. The additions of chemicals into the "vascular" system may increase the production of certain metabolites by plant cells to resist the invading parasites.

4. In the case of insects the introduced chemicals may impart tastes which are not appreciated by insects. The blood louse reacts to slight changes of sap

5. One may also speculate that the introduced chemicals, especially dyes, may be incorporated in the cell walls of cells thus increasing their resistance to disease.

6. The presence of the chemotherapeutant may stimulate excessive cell growth or, possibly division, and thus result in the drowning of larvae of sapwood borers.

7. It has also been speculated that factors of resistance may be correlated with qualitative difference in the sap with organic acids.

We can now conclude by realizing that the roads which lead to the solutions of internal therapy are of divers kinds. Many problems still confront us; these must be attacked successfully before we can disclose the real domain of chemotherapy. The present day practical application for the control of vascular diseases are hopeful, although skeptically looked upon by some. Let us open our eyes and our minds and let us not be too hasty to slam the doors shut to even the smallest ray of endeavor which is desperately penetrating that dark cloud of confusion.

See it Saw

Don't buy any chain saw until you see a DISSTON demonstration

New LOW PRICES!

ON ALL DO-101 MODELS starting at $299.75

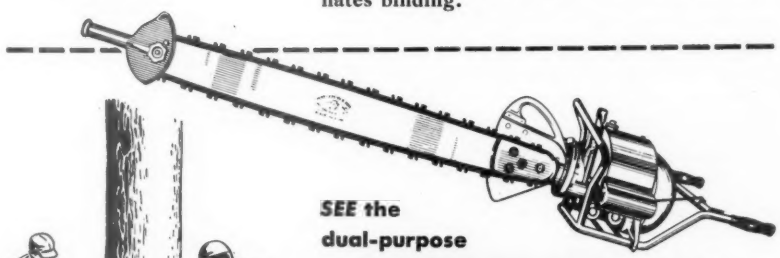
SEE the dual-purpose DISSTON DO-101 with Mercury Gasoline Engine

SEE this amazing saw in action . . . you'll find it hard to believe! A smooth-running powerhouse that cuts tough logs in seconds. Compact, precision-built Mercury Gasoline Engine keeps it running all day every day.

SEE the many cutting attachments, including: Spee-D-Tach tailstock for quick conversion to 2-man use. A choice of seven rail lengths from 18" to 40".

SEE the new 16" "Free-End" bow saw with DF chain. Perfect for fast bucking and limbing. Taper ground rail eliminates binding.

Most dependable, lightweight 1-man or 2-man saw



SEE the dual-purpose DISSTON DA-211 with 9 h.p. Mercury Engine

SEE this rugged, reliable worksaver cut and you'll agree there's no job too tough for it! So expertly designed and built it runs at top speed without vibration or chatter.

SEE why it's the undisputed leader for low cost two man felling, bucking of heavier timber. Meets *every* wood-cutting need.

SEE the cutting attachments available which extend the saw's usefulness, including narrow profile guide rails up to seven feet long and 25" Bow Saw attachment.

SEE these great saws in action

Ask your dealer for a demonstration today!

FREE Illustrated 32-page booklet "How to Make Money and Cut Costs with Chain Saws." Write today.

HENRY DISSTON & SONS, INC. 70G Tacony, Philadelphia 35, Pa., U.S.A.

On the West Coast: 1555 Fourth Ave., Seattle 14, Wash. • 635 N.W. 16th Ave., Portland, Ore.
In Canada: 2-20 Fraser Ave., Toronto 3, Ont.

Authors and Books

The following books may be ordered from TREES Magazine, 7621 Lewis Road, Olmsted Falls, Ohio.

PLANT DISEASES, in Orchard, Nursery and Garden Crops, by Ernst Gram and Anna Weber. Philosophical Library, New York. 618 pgs., illus. 8" x 11½", $18.50. *Translated from the Second Danish edition by Evelyn Ramsden. Edited and adapted by R. W. G. Dennis, Ph.D., Royal Botanic Gardens, Kew.*

Whereas previous English books on plant diseases have approached the subject from an academic standpoint and were addressed primarily to students, Gram and Weber's wo:k was compiled by practising plant pathologists for the use of growers themselves. Nurserymen, smallholders and market gardeners will find it a mine of helpful information. The first secion of the book is devoted to those general principles which must be understood before an intelligent attempt can be made at disease control. A few common diseases which attack a large number of crops are then described in detail. The next three sections are devoted to an account of the diseases of individual crops. These are arranged alphabetically in three groups, Tree and Bush Fruit, Vegetables and Herbaceous Fruit, and Ornamental Plants and Trees. Then follows a valuable section on control measures. A special feature of the book is the keys for diagnosis of diseases by their symptoms and emphasis is laid throughout on prevention and control of disease or reduction of the losses it involves. The 350 illustrations have been chosen to facilitate recognition of the diseases rather than to feature microscopic characters of the fungi associated with them. They are supplemented by ten colour plates.

This is a practical book for practical people. It will also find a place in the libraries of schools, agricultural colleges, horticultural research stations and agricultural advisers. Its authors have been associaetd for many years with the celebrated experimental station at Lyngby, Denmark and are plant pathologists with an international reputation. The English editor has had twelve years' experience as a practising plant pathologist and has taken the opportunity, with the authors' consent, of bringing the text up to date. The English edition is translated from the second Danish edition, which was called for within four years of first publication, and fills a notable gap in the literature of our basic industry.

* * * *

HOLLIES, by H. Harold Hume. The Macmillan Co., 60 Fifth Ave., New York. 242 pgs., illus., $6.75.

With holly rapidly gaining an important place in American gardens both in the North and South, there has been a need for a book which would cover the subject for the prospective grower. This book, the first devoted to holly, fulfills that need.

Dr. Hume, the foremost authority on the subject, discusses all of the important species of holly. Within these species, the individual hollies are listed by their botanical and common names and their characteristics are defined. Then every method of raising holly in the United States is thoroughly explored —starting from seeds or shoots, or transplanting from nurseries or forests.

He treats the various landscape uses of the different types, such as specimens, hedges, windbreaks or ground coverings, and suggests the best locations and spacings of the plants. Complete chapters are devoted to the best methods of pollination for the maximum amount of fruit; the pests and diseases which attack holly and the means of combatting them; and the protection needed for continued health — fertilizing, mulching, pruning and watering.

There are interesting sidelights through the book on the history of holly. The author traces its use as a Christmas decoration back to pre-Christian Rome. One chapter covers the caffeine hollies and the beverages made from them. The American Indian believed the drink to contain certain mystical qualities; mate, a holly tea, is still widely popular in South America.

The commercial value of raising holly, a rapidly growing industry in this country, is discussed with a complete history of the large orchards.

Seventy-two photographs, eight of them in full color, illustrate both the beauty of the plants and the variety of their uses. A practical book for anyone curious about or interested in holly, its unusual completeness insures its continued value as *the* reference work on the subject.

* * * *

TREES, AND THEIR STORY, by Dorothy Sterling. Doubleday & Co., Inc., New York. 119 pgs, illus., $2.50.

Here is a simple and concise introduction to the whole story of trees: from giant sequoias to dwarfed pines and fan-shaped ginkgoes, from flowering magnolia and dogwood to fruit and nut trees. All parts of trees are discussed—roots, trunks, sap, buds, seeds, leaves—as well as the effects of the seaons on them, the growth from fertilization in the spring to fruit-bearing—fruits, nuts, cones—in the fall.

Clues for "tree detectives" are provided —leaf scars, barks, shapes of trees, leaves, seeds—which, together with the photographs, make identification of trees easy even for beginners. A chapter on conservation completes the picture.

Dorothy Sterling and Mike Ehrenberg know how to present facts and pictures accurately and interestingly and, as in their *United Nations, N. Y.* and other books, prove again that factual picture books can be fascinating and beautiful.

More than an identification book, this is a comprehensive, readable discussion of trees and their growth, simply written and graphically illustrated with clear, detailed photographs. Tree lovers of all ages will find it a welcome addition to their nature libraries.

Tree Values

(Continued from Page 9)

submitted by the tree expert for tree repair work, but the deductions must be taken for the year in which the storm occurred.

Second, Section 23 E 3 of the Internal Revenue Act provides that: "loses substained by an individual and not compensated for by insurance or otherwise may be deducted, if the losses arise from hurricane, ice storms, etc." The law reads that the amount of the deduction which may be allowed is the difference in the adjusted value of the property directly before and directly after the ice storm, hurricane or casualty.

I have been advised by one income tax authority that the amount of the repair bill may not be the true measure of loss although it is frequently accepted by the Bureau of Internal Revenue and has been accepted by the Tax Court, Harmon 13 TC 373 in 1949. In this case the higher court ruled that the amount spent for repair was reasonable and not in excess of the amount necessary to restore the damaged property in its condition prior to the storm and flood.

It is also interesting to learn from Prentice-Hall's Federal Tax Service that you can deduct an uncompensated casualty loss even if it was not incurred in trade or business. They also mention that if your home is damaged by termites you cannot deduct your loss damage as termites are not considered a casualty.

It is indeed a pleasure to have been with you today and perhaps the question of tree evaluation and income tax deductions is a little clearer. If there is any question concerning the latter, however, rather than go ahead and make recommendations I would certainly suggest that you or your client confer with a tax consultant experienced in casualty losses.

Spray Applicators

(Continued from Page 18)

is filled with gasoline and the tube is capped with a special cone, "Swingfog" becomes a flame-thrower for destroying weeds and other noxious plant growths.

Its "brother products" include "Swingheater," which pre-heats internal combustion engines of tractors, trucks, buses and other equipment. This device can also be used for heating the interiors of vehicle cabs and bodies, and also such stationary installations as cabins, huts and tents.

Another allied product is "Swingburner," which generates fast, intense heat. A two-stage heater with an adjustable output of up to 120,000 British Thermal Units per hour, it is designed to fit into any conventional fire-box. It has many applications, particularly in construction operations carried on in sub-freezing temperatures.

MUNICIPAL ARBORISTS SECTION
National Shade Tree Conference
Tues., 8 p. m. Aug. 18
CHICAGO

By This Time You Know That

TREES CAN BE FED THROUGH THE FOLIAGE

You treemen know that you have to feed more than just Nitrogen, Phosphorus, and Potash. You also know that there are some chemicals which you can't feed in combination or at the same time unless you know the proportion of each to use in your formula. Spare yourselves the trial and error method. Use RA-PID-GRO which was not evolved overnight but by thirty years of trial and error before it was offered to the public.

Do not waste time by testing your plant food formula on the soil. Give the tree the food it needs and you will also be adding to the soil the important enriching elements it needs.

Imitation is the sincerest flattery.

There is no substitute for Ra-Pid-Gro.

Twenty years ago Ra-Pid-Gro revolutionized the feeding of plants:

First—in foliage feeding;

First—in producing plant food that could be used with insecticide and fungicides.

See our Representatives at

BOOTH No. 1

NATIONAL SHADE TREE CONFERENCE

RA·PID·GRO

RA-PID-GRO CORPORATION · DANSVILLE, NEW YORK

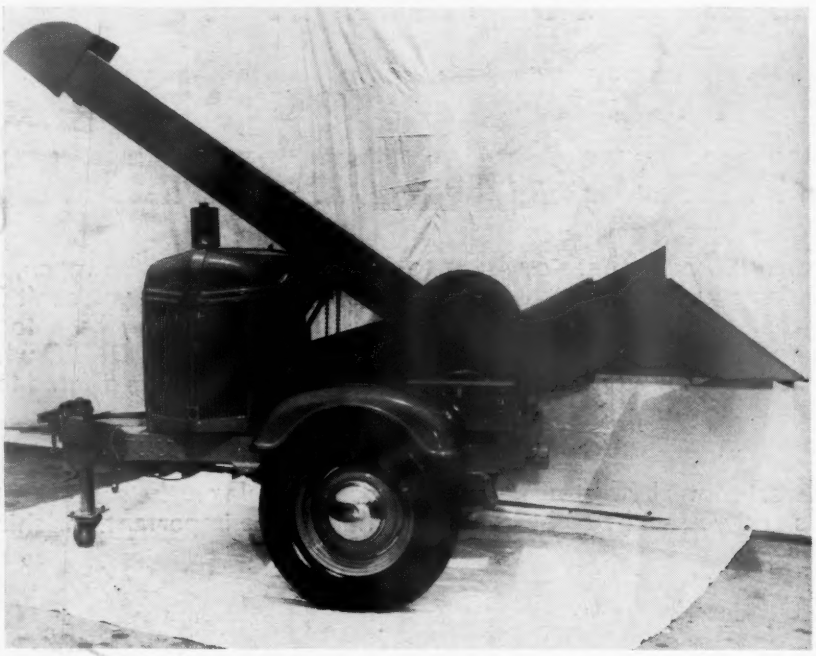
RETURN POSTAGE GUARANTEED
Trees Magazine, 7621 Lewis Rd.
Olmsted Falls, Ohio

Postmaster: If addressee has moved and new address is known, notify sender on Form 3547, postage for which is guaranteed.

Sec. 34.66 P.L.&R.
U. S. POSTAGE
PAID
Olmsted Falls, Ohio
Permit No. 12

SOONER OR LATER...

MOST BRUSH FROM TREE TRIMMING OPERATIONS WILL BE DISPOSED OF MECHANICALLY!



THE ASPLUNDH CHIPPER

In Addition to Trailer, Units Can Be Truck, Skid or Tractor Mounted.

IN CANADA:
Canadian Line Materials Ltd.
Toronto 13, Ontario

WEST COAST:
W. S. Rowland Trees
Pasadena 6, Calif.

For Details Contact

Asplundh Chipper Company

505 York Road — Jenkintown, Pa.